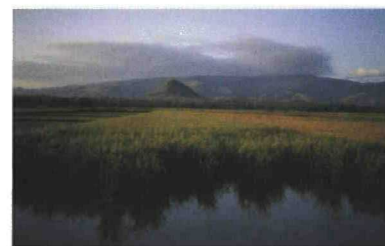




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Plainwell Mill Banks Emergency Action Design Report

**Former Plainwell Mill Property
Plainwell, Michigan**

*Operable Unit No. 05 of the Allied Paper, Inc./
Portage Creek/Kalamazoo River Superfund Site*

January 2008



RMT, Inc., Michigan | Weyerhaeuser Company
Final

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Table of Contents

1	Introduction	1
1 1	Background	1
1 2	Emergency Action Objectives	2
1 3	Emergency Action Approach	2
1 4	Design Report Organization	4
2	Proposed Construction Activities	5
2 1	Overview of the Design Components and Approach	5
2 2	Site Preparation – All Construction Zones	6
2 2 1	Clearing and Grubbing	6
2 2 2	Top of Bank Work Platform	7
2 2 3	Outfall Management	7
2 2 4	Utility Management	8
2 2 5	Residuals Containment Area	9
2 2 6	Installation of Water Quality Monitoring Equipment	10
2 2 7	On Site Wastewater Treatment	10
2 3	Excavation Activities	10
2 3 1	Estimated Removal Volumes	11
2 3 2	Cover Placement and Beneficial Reuse of Clean Soil	11
2 3 3	Sediment Control	11
2 3 4	Residuals Dewatering and Disposal	12
2 4	Bank Reconfiguration	13
2 5	Residual Disposal	13
2 6	Site Restoration and Demobilization	14
3	Monitoring and Confirmation Sampling Plan	15
3 1	Resuspension Monitoring and Control	15
3 2	Discharge Monitoring	18
3 3	Residuals Excavation Documentation Sampling	19
3 4	Erosion Control and Vegetation Monitoring	20
4	Project Schedule	23
4 1	Summary of Construction Activities and Schedule	23
4 2	Potential Impacts to Construction Schedule and Sequencing	23

List of Tables

Table 1	Summary of Construction Zones and Quantities for Plainwell Mill Bank Emergency Action	5
Table 2	Plainwell Mill Emergency Action Outfall Types and Management Approach	8
Table 3	Monitoring Plan for Plainwell Mill Banks Emergency Action	22

List of Figures

Figure 1	Hand Auger and Geoprobe Locations
Figure 2	Near River Residual Thickness
Figure 3	Project Site Plan
Figure 4	Zone A
Figure 5	Zone B
Figure 6	Zone C
Figure 7	Zone D
Figure 8	Conceptual Design for Zone A
Figure 9	Conceptual Design for Zone B
Figure 10	Conceptual Design for Zone C
Figure 11	Conceptual Design for Zone D
Figure 12	Implementation Schedule

List of Appendices

Appendix A	Correspondence
Appendix B	Plainwell Mill Bank Reconnaissance and Investigation
Appendix C	Outfall Location and Management Plan
Appendix D	Erosion Protection
Appendix E	Permit Applications

Section 1

Introduction

1.1 Background

Phase I of the Plainwell Impoundment Time Critical Removal Action (Plainwell Impoundment TCRA) (BBL 2007) is being conducted in 2007/2008 with Phase II activities to follow. Conditions along the Kalamazoo River at the former Plainwell Impoundment were determined to represent an imminent and substantial threat to public health and the environment (USEPA Enforcement Action Memorandum dated February 14, 2007) so these conditions are being addressed by the Plainwell Impoundment TCRA under terms of a Settlement Agreement (Administrative Settlement Agreement and Order on Consent for Removal Action Docket No. V W 07 C 863) with members of the Kalamazoo River Study Group (KRSRG). During Phase I in 2007, downstream activities were projected to include dismantling a portion of the existing Plainwell Dam and relocating the flow of the Kalamazoo River to its original channel. In addition, specific areas of river bank and floodplain soils that contain deposited paper residuals have been targeted for removal including areas upstream of Michigan State Highway 131. Similar deposits of residuals are also present along the former Plainwell Mill banks.

In a letter dated June 29, 2007, the United States Environmental Protection Agency (USEPA) has authorized Weyerhaeuser to proceed under Paragraph 67 of their 2005 Consent Decree and thus prevent, abate, or minimize a release or potential release from the former Plainwell Mill banks. Work will include excavating or containing paper residuals that are present in the floodplain and bank areas near the river along the former Plainwell Mill, reshaping of banks in those locations as needed, and placement of erosion controls to minimize bank undercutting. These bank areas are part of the Kalamazoo River Operable Unit. Specific emergency response work to be performed by Weyerhaeuser in addressing the threatened release will be designed and performed in a manner that considers the City of Plainwell future land use concepts and is generally consistent with applicable provisions of the Settlement Agreement and the Former Plainwell Impoundment Time Critical Removal Action Design Report (Appendix 4 to the Settlement Agreement).

In July 2007, a visual assessment of the former Plainwell Mill banks was conducted to identify the extent of paper residuals along the 2,600 linear feet of banks adjacent to the Kalamazoo River. Thirty-nine hand augers were placed in flood plain and bank areas. 12 sediment cores were retrieved from near bank submerged locations adjacent to the western property boundary and 12 soil borings were advanced at the top of the banks to confirm extent of deposits. Figure 1 identifies sampling locations. A location and elevation survey was also performed to help define likely areas of both exposed and submerged paper residual deposits. Information from the visual assessment was used to develop the design approaches presented in this report. The most critical findings are listed below.

- Paper residuals are present in varying thicknesses along the majority of the banks along the former Plainwell Mill Property (see Figure 2)
- Submerged residuals are present in the river adjacent to the banks. These residuals are frequently buried beneath natural soils, apparently due to bank sloughing.
- Multiple site preparation activities will be needed prior to initiation of the tasks being performed as part of the Emergency Action. Issues that impact the construction activities include active and abandoned power poles, other active utilities (telephone, etc), large trees and dense vegetation along much of the banks, multiple outfall discharge locations within the bank area, large concrete debris and rubble along bank, low bearing strength (soft) sub soils associated with the floodplain materials and potentially unstable side slopes for equipment staging.
- Bank and floodplain configurations vary across the site, requiring a variety of potential approaches to implementation of the Emergency Action. On site construction experiences will be used to refine the specific activities and it is likely that the excavation and bank reconfiguration approaches presented in this Design Report will need to be modified during field activities to incorporate the information gathered by on site experiences. At that time, site conditions, such as local bank configuration, the quantity of residuals within reach of the construction equipment as well as weather, utilities interference, and other site constraints, will be better identified and this information can be used to refine the most appropriate methods for minimizing the potential release of residuals.

Additional discussion of the bank assessment procedures and results are included as Appendix B of this Design Report.

1.2 Emergency Action Objectives

The following objectives have been developed for the Emergency Action along the former Plainwell Mill banks:

- Remove or contain visible paper residuals and address previously identified areas of reported polychlorinated biphenyls (PCBs) concentrations of greater than 50 mg/kg in soils/sediments along the former Plainwell Mill banks to a target concentration of either 4 mg/kg or 1 mg/kg.
- Reconstruct bank, as needed, to minimize future release of PCBs.
Reconfigure bank to limit upland cutbacks into former Plainwell Mill property and place erosion controls to provide comparable stability to pre excavation conditions.

To achieve the removal objectives stated above, physical and analytical data from previous investigations performed on sediments, bank soils, and floodplain soils were reviewed to identify and delineate specific areas of sediment and soil to be targeted as part of this Emergency Action.

1.3 Emergency Action Approach

The former Plainwell Mill Banks Emergency Action is scheduled to begin during the Fall of 2007, weather and field conditions permitting, and will be implemented in steps:

Step 1 Prepare and Submit Plainwell Mill Banks Emergency Action – Conceptual Design Approach
(Submitted on August 14 2007)

Step 2a Prepare and Submit Emergency Action Design Report (Submitted on September 5 2007)

Step 2b Update Multi Area QAPP and FSP (to be submitted on September 10 2007)

- Submit Multi Area QAPP and FSP addenda as required for the Design Report
- Submit an Emergency Action Health and Safety Plan

Step 3 Conduct Site Preparation Activities

- Clear and grub site to create work platform and provide access to residuals
- Conduct follow up identification of outfalls along the Kalamazoo River
- Conduct pre excavation site survey
- Refine and implement outfall and utility management plans
- Prepare sediment soil and water management areas

Step 4 Excavate Residuals and Reconfigure Banks

- Work in construction zones defined by similar bank or river conditions
- Place water management and monitoring systems along each excavation zone
- Implement bank protection approach to limit cross contamination
- Excavate submerged and non submerged paper residuals by zone
- Perform confirmation sampling and re excavate or contain if necessary
- Reconfigure bank as needed
- Place erosion protection materials as defined in Section 2
- Review Emergency Action approaches and schedule after completion of work in each zone and refine for the next zone as needed
- Stage stabilize and transfer removed paper residuals to off site disposal location
- Treat and discharge dewatering fluids

Step 5 Document Emergency Action

- Conduct post excavation survey
- Prepare Emergency Action documentation report

The planned implementation schedule for the construction step is presented in Section 4 Weather water levels river velocity and bank conditions will all affect the schedule so interim reviews of construction progress and methodology will be conducted after completion of the Emergency Action activities in each zone

1.4 Design Report Organization

In addition to this introductory text, the remaining sections of the streamlined Design Report present the final description of the Former Plainwell Mill Bank Emergency Action followed by a series of appendices that present the results of supplemental data collection and the design basis for the Emergency Actions. The sections and appendices consist of the following:

- Section 2 – Design Basis and Description: A description of each element of the Emergency Action from the site preparation activities to the excavation activities (estimates of removal volumes, reuse of soil, sediment control, dewatering, material processing and disposal) are discussed. The bank reconfiguration framework including placement of erosion controlling river rock also is presented along with an overview of site restoration that can later be integrated into the City of Plainwell's longer term redevelopment plans.
- Section 3 – Monitoring Plan: A description of the various monitoring activities are described including resuspension monitoring, dewatering system discharge monitoring, and residuals removal confirmation sampling along banks in floodplains and from sediment.
- Section 4 – Construction Schedule: Presents the construction and implementation schedule for the Emergency Action and discussion of the sequencing and potential schedule delays associated with the Emergency Action activities.
- Section 5 – References: Identification of any references cited in this report.
- Appendix A: Relevant correspondence associated with the former Plainwell Mill Banks Emergency Action.
- Appendix B: Discussion of the results from the visual assessment of residuals performed in July 2007.
- Appendix C: Identification of existing outfalls and description of methods for managing outfalls during construction activities.
- Appendix D: Discussion of approach to the erosion protection systems by construction zone.
- Appendix E: The United States Army Corps of Engineers (USACE)/Michigan Department of Environmental Quality (MDEQ) joint permit application and National Pollutant Discharge Elimination System (NPDES) permit application to show substantial compliance and equivalence to the permits.

Section 2

Proposed Construction Activities

2.1 Overview of the Design Components and Approach

The objectives of the Former Plainwell Mill Banks Emergency Action include removal or containment of the visual paper residuals and bank reconstruction to minimize potential future releases of PCBs while limiting the amount of upland cutbacks along the Mill property and not placing fill into the river. Specific circumstances as to why excavation would not be feasible will be determined based upon field conditions. In certain locations, the presence of large underground structures may obstruct the removal. In other instances, bank instability or access limitations may limit the ability to safely excavate limited areas of residuals and containment could be the only available option to control potential for releases or future exposure. In other locations, the volume of material targeted for removal may result in upland bank cutbacks that are objectionable to the City of Plainwell and containment offers a more acceptable alternative. These determinations will be made in conjunction with the agency oversight representatives. Containment is expected to consist of placement of 6 inches of clean soil in a manner similar to that proposed in the Plainwell Impoundment TCRA (Section 5.4.3). The soil cover placement is further described in Section 2.3.2 of this Plainwell Banks Emergency Action Design Report. These objectives require flexibility so that the construction approach can be adapted to the different bank configurations and quantities of residuals present along the 2,600 linear feet of bank. To provide flexibility during construction and assist in presenting design approaches, the mill bank has been subdivided into four construction zones that reflect different bank conditions. The results of the delineation process are summarized below in Table 1 and shown on Figure 1.

Table 1
Summary of Construction Zones and Quantities for Plainwell Mill Bank Emergency Action

Construction Zone	Approximate River Bank (feet)	Approximate Volume to be Removed (Cubic Yards)	Characteristics
A	600	2,600 to 3,650	Definable floodplain areas, wooded and higher banks, vegetation into river, lower river velocities
B	700	360 to 400	Steep and heavily wooded banks, no observable floodplain areas and moderate water velocity
C	650	550 to 600	Steep banks with large trees present, limited floodplain, area of highest water velocity
D	650	310 to 350	Lower banks, mainly grass and small bushes, moderate river velocity
Totals	2,600	3,820 to 5,000	

The sediments/soils to be removed include the following

- *Near Shore Sediments* River sediments located adjacent to the river bank. Near shore sediments targeted for removal generally include accessible (i.e. from the bank) sediment deposits with visual residuals. The sediment removal will be constrained by the reach of the excavation equipment and the utility lines present along the Plainwell Mill banks. The targeted sediment composite sample concentration after removal is less than 1 mg/kg (consistent with the Plainwell Impoundment TCRA).
- *Floodplain Soils* Soil materials located in the floodplain (i.e. exposed former sediments) extending landward from the edge of the river. Floodplain soil removal is primarily targeted at removing isolated pockets of visual residuals with PCB concentrations likely greater than 4 mg/kg. However at some river elevations the floodplain soils are submerged becoming near shore sediments. Thus the targeted floodplain composite sample concentration after removal is also targeted at less than 1 mg/kg.
- *Bank Soils* Soil materials located on the face of the existing river banks above the current water elevation and below the existing top of bank. Bank soils targeted for removal include those soils with visual residuals and those that need to be removed to create a stable river bank. The targeted PCB concentration for bank soils is 4 mg/kg after visual residual removal.

The Emergency Action construction zones as well as the preliminary site layout showing the dewatering pads, the staging areas and the work platforms are shown in Figure 3 to Figure 7. For discussion in this Design Report, the construction activities have been separated into four primary components that are described in detail in the remainder of this section. These include Site Preparation, Residuals Removal, Bank Reconfiguration, and Residuals Management. The subparts of each component are described in this section. The various monitoring and confirmation sampling activities are discussed in Section 3.

2.2 Site Preparation – All Construction Zones

Site preparation will involve clearing and grubbing as required to provide a working area with access to the banks and river. Work will also include confirmation of the locations of outfalls located along the Kalamazoo River. A few outfalls will be considered for abandonment while all storm water outfalls will be preserved. In addition, a plan to work with the existing utilities at the site, including management of possible interference from overhead power lines, will be refined and submitted to Consumer's Power for approval prior to initiating site preparation activities.

2.2.1 Clearing and Grubbing

The areas requiring clearing and grubbing include: 1) the top of the banks approximately 20 feet in width to allow equipment and truck access; 2) the banks along the entire length of the former Mill property; and 3) an area on the former Mill property to allow dewatering of removed materials. The trees encountered will be cut at or near ground level and moved to a staging area on site. Root wads with short tree trunks (if possible) will remain along the bank unless removal is required for residual excavation. Prior to removal of root wads (if necessary), silt fencing or

floating silt curtain (depending on conditions) will be placed to minimize any soil runoff into the river

As requested by representatives from the City of Plainwell vegetation will be cleared only to the extent required to establish access staging areas project support areas and to allow effective residuals excavations The smaller trees will be chipped and disposed off site Larger tree trunks and stumps derived from clearing will be stockpiled on site for either later beneficial reuse or off site disposal Since the root wads may contain residual waste any removed root wads will be disposed off site with the residual material

2 2 2 Top of Bank Work Platform

A 15 to 20 foot wide working platform will be required to allow equipment and truck access along the top of the banks The platform area will be graded as level as possible for safe working conditions If necessary the working area will be strengthened using a geotextile fabric followed by placing and compacting up to 1 foot of stone or gravel for support

2 2 3 Outfall Management

Thirteen outfalls of varying types were observed along the Kalamazoo River within the area targeted for the Plainwell Mill Banks Emergency Action during two site visits in 2007 (see Appendix C) During the site preparation activities the presence of these and any additional outfalls and their type of use will be confirmed following an outfall screening process Depending upon the results of this screening the outfall will either be retained or considered for abandonment On a preliminary basis two of the existing 13 outfalls are expected to be considered for abandonment during the Emergency Action if the screening process confirms their historic process use

Outfall Screening Process

The in field outfall identification and screening process is presented in Appendix C These activities are scheduled to be completed after clearing and grubbing of the vegetation and prior to excavation of the residuals Specific components of the outfall screening process are summarized as follows

- 1 After observation of an outfall determine if it has already been identified based upon the historic review (summarized in Appendix C Table C 1)
- 2 If the outfall has been identified and its use is determined proceed to the Outfall Types and Management Approach (Table 2)
- 3 If an active storm water outfall does have a former process water connection further evaluation will be performed as needed during the Remedial Investigation activities to be conducted at a later date

- 4 If the outfall has not been identified or its use is unknown or unclear complete the following steps
 - Locate nearby storm sewer inlets that could be interconnected to the outfall and introduce clean city water into the storm inlet while observing flow at the outfall
 - If a location to introduce water is unavailable or too far from the outfall for limited water usage attempt a smoke test using commercial smoke test equipment typically applied to trace illegal storm water connections
 - If water or smoke test inlets are not available or do not confirm a connection to an outfall the outfall is classified as unknown and will be maintained during the Emergency Action Additional assessment of unknown outfalls will be addressed during the Remedial Investigation activities

Once the outfall type and use is determined then the outfall management approach for each location will be established The planned management approach for any observed outfalls present along the Kalamazoo River banks at the Plainwell Mill is summarized in Table 2

Table 2
Plainwell Mill Emergency Action Outfall Types and Management Approach

Outfall Type and Use	Management Approach
Storm Water	Maintain Outfall
Former Process Outfall with No Storm Water	Considering Abandoning Outfall
Fire Protection Testing	Maintain Outfall
Unknown Source	Maintain Outfall

Maintaining the outfall will primarily involve using caution during nearby construction activities such as limiting excavation equipment size or speed near the outfall structure Where applicable abandonment is expected to consist of removing above grade features and either continued removal of below grade outfall structures or filling several feet of the outfall discharge pipe with concrete

In addition to the thirteen observed outfalls two additional outfalls were identified in the historic data that were apparently abandoned prior to the most recent ownership transfer of the site Additional effort will be made during the outfall screening process to identify the locations of these abandoned outfalls so that they can be avoided during construction activities

2.2.4 Utility Management

Other site related constraints within the construction area include overhead power lines along the river banks and possible underground phone lines that bisect the banks near the former

wastewater treatment plant Consumers Energy has been contacted regarding the utility lines and they have provided verbal approval to work within the right of way with certain restrictions (Consumers Energy 2007) They will provide additional details on the specific restrictions once they have reviewed this Design Report It is Weyerhaeuser's intent to provide the draft Former Plainwell Mill Banks Emergency Action Design Report to Consumers Energy concurrent with submittal to the USEPA The implications of utility restrictions could include considering a *localized power shutdown if construction equipment can not maintain the required clearance from the lines*

2.2.5 Residuals Containment Area

An area designated to contain the residuals from the banks will be constructed adjacent to the existing access road (Figure 5) The containment area will be approximately 100 feet wide and 200 feet long The area will be graded to remove the existing topsoil layer and pushed out to form a containment berm along the edges of the containment pad Once the containment pad area is cleared the entire area will be compacted with a vibratory roller and the bottom will be inspected for suitability to support placement of the liner material If soft or compressible areas are encountered or there are objects such as concrete or stone which are impractical to remove the design may be adapted to include placement of a Geofabric and/or a sand bedding layer over the existing ground surface The liner will be exposed to some stresses from material placement but not extensive truck traffic As such a 40 mil LLDPE liner was specified due to its flexibility under various stresses as well as its strength and durability The LLDPE liners have the ability to elongate under stress allowing them to maintain their integrity under localized differential settlement conditions without puncturing tearing or cracking The LLDPE also has a superior resistance to low temperatures and ultraviolet exposure which may be expected at the Plainwell Mill site However to provide further protection up to 12 inches of sand will be placed on top of the liner (below the residuals) The grade of the pad will allow any excess water to drain to a constructed sump built within the liner system The sump will be constructed by excavating a trench along the low end of the pad which will flow to a sump pit Filter material consisting of open graded crushed stone will be placed in the trench and sump which will have an 8 inch perforated PVC standpipe Run on water will be pumped from the center of the standpipe to the treatment facility when present in quantities that require management Based on the consistency of the material removed this area could also be used to solidify residuals The residuals will be dewatered through gravity drainage dry soil mixing and decanting The primary solidification agent planned for use during the project will be dry material obtained from the site If additional solidification is needed to lower moisture content of the residuals to provide a more compactable material for disposal additives such as lime or cement will be mixed with the residuals using a backhoe at the staging area

2.2.6 Installation of Water Quality Monitoring Equipment

During site preparation activities the water quality monitoring locations will be identified and equipment will be installed at one upstream and two downstream locations from the first excavation zone as described in Section 3.1

2.2.7 On Site Wastewater Treatment

A wastewater treatment system will be rented from Pro Act Services in Ludington, Michigan and transported to the site. The on site wastewater treatment system will consist primarily of filters and carbon adsorption columns. The system is rated at 200 gpm with a holding capacity of 20,000 gallons. The multimedia filters and carbon columns will be trailer mounted. A separate 10,000 gallon tank will be available for equalization/sedimentation or effluent storage as needed. A separate effluent holding tank (approximately 250 gallons) will be used to provide a sampling location and to store treated effluent for backwashing and selected decontamination rinsing. System operation and maintenance will be performed in accordance with the prescribed operational guidelines provided by Pro Act Services.

2.3 Excavation Activities

The typical sequence of sediment and soil removal activities along the former Mill banks is expected to proceed as follows:

- Install soil erosion and sedimentation control measures as appropriate for each zone condition
 - Install resuspension controls along entire zone based upon location specific hydraulic conditions
 - Perform clearing and grubbing at the removal area
 - Install impermeable membrane across bank slope to limit contamination of bank areas from spillage during removal
 - Excavate near shore sediments, bank soils, or floodplain soils as shown on the drawings
 - Test underlying media to determine if additional excavation or cover placement is needed to meet the Emergency Action concentration targets and continue excavation or place cover as appropriate
 - Gravity drain and stabilize soils/sediments at the staging areas to allow the transportation and disposal of the soils/sediments
- Reconfigure the banks to provide erosion protection comparable to the preconstruction condition while limiting upland cutbacks along the former Mill property.
- Transport the characterized dewatered soils/sediments from the staging area to an approved disposal location in accordance with applicable regulations

Perform restoration activities at the removal area. As appropriate, disturbed ground surfaces will be seeded with native grasses. If weather conditions preclude replanting and erosion is a concern, the areas will be provided with temporary erosion control mats until Spring 2008.

Sediment and river bank soil removal operations will be accomplished primarily with long reach excavators which will be positioned as close to the water's edge as possible while still allowing safe operations. From this vantage point, the excavator can reach up to 40 feet horizontally from the bank to remove floodplain soils and visually impacted sediments. In some areas with minimal clearance due to power lines, smaller boomed equipment may be required. As the excavators gradually advance toward the bank, they will remove near shore sediments and bank soils based on visual observations.

2.3.1 Estimated Removal Volumes

Based on the delineation of construction zones A through D described in Appendix B and shown in Figures 4 to 7, the following summarizes the estimated volumes of material to be excavated during the Mill Bank Emergency Action. These projected quantities are presented as ranges since they are preliminary estimates based on a number of design assumptions including overall objectives, material accessibility and delineation limits, excavation technologies and approach and excavation confirmation methods described in Section 3. Actual amounts of material removed may vary based on these and other factors.

- Zone A approximately 2,600 to 3,650 cubic yards
- Zone B approximately 360 to 400 cubic yards
- Zone C approximately 550 to 600 cubic yards
- Zone D approximately 310 to 350 cubic yards

Total estimated removal volume approximately 3,820 to 5,000 cubic yards

2.3.2 Cover Placement and Beneficial Reuse of Clean Soil

Once visual residuals have been removed, confirmation samples will be collected as described in Section 3.3 and shipped to the laboratory for expedited analyses. If expedited analytical testing indicates that the targeted PCB concentrations are not met after the initial removal of visual residuals and one 6 inch lift of supplemental soil excavation along the banks, a cover layer will be placed. A Geofabric layer will first be installed to provide in identified separation from the underlying impacted soils. Then the 6 inch cover layer, consisting of either a layer of soil or washed river run stone, will be placed. This cover will limit erosion and eliminate direct exposure in the isolated areas of higher concentrations of PCBs. If imported cover soil is used, one composite sample per 10,000 cubic yards of material will be analyzed for PCBs and applicable TAL/TCL parameters as agreed to by USEPA representatives. Measured concentrations of soil constituents will be compared to applicable Part 201 soil criteria and Part 213 Risk based screening levels provided in RRD Operation Memorandum No. 1 (Table 2 Column #19 Direct Contact Criteria and RMSLs) issued by MDEQ on December 10, 2004. If there are no exceedances of these criteria, the soil will be considered suitable for cover. Non-detected concentrations will be assumed to be below criteria and therefore acceptable.

During the course of sediment and soil removal operations it is anticipated that native and/or clean soils may be encountered that need to be removed or moved as part of the reconfiguration of bank and/or floodplain slopes. Clean soil removed during soil and sediment removal activities and verified by historical data to be from areas with PCB concentrations well below applicable criteria may be temporarily stockpiled and reused to cover areas requiring an isolation layer or for other restoration activities within the project area. If cover soil is required a composite sample of the soils from the source area will be analyzed for PCBs and applicable TAL/TCL parameters as agreed to by USEPA representatives. Measured concentrations of soil constituents will be compared to applicable Part 201 soil criteria and Part 213 Risk based screening levels provided in RRD Operation Memorandum No. 1 (Table 2 Column #19 Direct Contact Criteria and RMSLs) issued by the MDEQ on December 10, 2004. If there are no exceedances of these criteria, the soil will be considered suitable for cover. Non detected concentrations will be assumed to be below criteria and therefore acceptable.

2.3.3 Sediment Control

The main goal of the sediment control system is to minimize downstream transport of resuspended material associated with the removal of targeted sediments and bank soils. The most feasible method is utilizing silt curtains along with additional anchoring where necessary. Common requirements will include the placement of a silt curtain prior to any construction within the river. Silt curtains are vertical flexible structures that extend downward from the water surface to a specified water depth. The curtain will consist of impermeable fabric 6 or 8 inch diameter closed cell foam floatation devices and double continuous 5/16 inch chain ballast enclosed in fabric pockets at the bottom edge of the curtain. The curtain will be designed for the maximum water depth encountered with adjustments for each zone if needed. The length of the silt curtains will be dependant on river velocity. Shorter sections of silt curtains will be utilized in river areas with higher velocity. The base of the silt curtain will be anchored by attaching additional chain to the anchor chain for weighting purposes. The silt curtains will be inspected daily prior to start of any excavation and whenever any visible or measured turbidity increases are identified downstream. If turbidity releases are identified additional actions will be taken to minimize any future release. These may include adding anchor posts, flow deflectors such as concrete barriers or Portadam type structures deployed upstream as necessary, additional curtains or modification of removal rates and approaches. Once construction in one zone or sub zone is completed the silt curtain will be moved to the next location. Erosion control methods will be in general conformance with the MDEQ Soil Erosion and Sedimentation Control Training Manual.

2.3.4 Residuals Dewatering and Disposal

Wet excavated materials will be drained and stabilized at the pad area (see Figure 5) through gravity drainage. Water draining from the residuals will be collected, treated, and discharged to

the river. Temporary erosion controls (e.g., sumps, silt fence material, earthen berms) will be installed to contain the decant water and storm water runoff and thereby limit uncontrolled discharges to the Kalamazoo River.

The water accumulated from residuals placed into the residuals containment area will be managed via passive filtration and treatment and returned to the Kalamazoo River in a manner equivalent to a permitted NPDES discharge. The residuals will be placed in one end of the containment pad. Filter fabric and sand berms will be constructed within the residuals containment area on the opposite end. Filtered water that migrates through the sand berms into the collection sump areas will be pumped to tanks and then through an on-site mobile treatment plant prior to discharge.

2.4 Bank Reconfiguration

After residuals are removed and confirmation sampling verifies the targeted PCB soil or sediment/floodplain concentration has been reached, the banks will be reconfigured as needed to provide a comparable or lower potential for erosion than the pre-existing condition. Ultimately, the banks will need to be reconfigured as part of the owner's (City of Plainwell) planned riverwalk or other site development (Plainwell, Michigan, 2007) and a long-term erosion control plan developed separately by the City to be compatible with those future land use(s). In the interim, the banks will be stabilized to limit erosion by re-vegetation and/or placement of well-graded 6-inch D50 river-run stone or similar material.

Details for bank reconfiguration and erosion control approaches will be developed based upon the completed excavation quantities and specific bank locations. However, conceptual bank reconfiguration and erosion protection designs by zone are illustrated in Figure 8 to Figure 11. The primary components of the bank reconfiguration and erosion control approach include leaving root wads in place to stabilize the side slope and encourage re-sprouting, reconfiguring the bank slope from the floodplain to the top of bank to reflect the pre-excavation condition or better, placement of a river-run stone layer at the toe of the bank to protect the upland areas from additional erosion, re-vegetating the bank (or providing temporary erosion control mats as needed until Spring 2008 if weather conditions preclude replanting). Further discussion of the erosion protection system to be used in each zone is included as Appendix D.

2.5 Residual Disposal

Final disposal of removed residual material will be at either the 12th Street Landfill or an approved off-site disposal facility. The final identification of the disposal location will be completed before excavation activities are initiated at the site. All impacted soil and sediment materials designated for disposal will be solidified to the extent necessary to pass a Paint Filter Test prior to leaving the Plainwell Site. Truck liners and/or sealed tailgates will be utilized to further reduce the potential for leakage of water onto public roadways. Additional measures, such as truck bed covers and/or spraying down of soil materials,

with water prior to leaving the Site will also be implemented if needed to control fugitive dust during transport to the disposal location

To the extent possible based upon the truck traffic volume from Plainwell Impoundment TCRA activities truck traffic will be directed on and off site via the recently constructed temporary haul road exiting at Prince Street. Although increased traffic cannot be avoided, major material hauling and construction activities will be limited to daylight hours and, where and if necessary, flagmen and/or signage will be employed to manage traffic and to inform non project traffic of any new travel patterns.

2.6 Site Restoration and Demobilization

Upon conclusion of the construction activities, all equipment, facilities, and personnel will be systematically demobilized and removed from the project area. For example, construction related debris or other remaining materials will be removed or disposed of properly, and any equipment or material decontamination that is necessary will be performed prior to its removal from the project area. Access roads and staging areas will be removed (unless the appropriate agencies determine they should remain in place) and their locations graded and seeded as necessary to restore a vegetated surface that is compatible or consistent with the design elements employed during habitat reconstruction. Post construction monitoring and maintenance activities will continue to be performed on site as necessary.

Section 3

Monitoring and Confirmation Sampling Plan

The Emergency Action monitoring and confirmation sampling plan is a multiple component plan with various objectives. Overall monitoring will provide information to minimize adverse secondary impacts from the Emergency Action and to confirm the results of the remedial activities. In general and when applicable the monitoring approach is consistent with that being performed under the Plainwell Impoundment TCRA (BBL 2007). Modifications to the TCRA approach have been made when monitoring objectives for these Emergency Actions are different. The components of the monitoring plan and the associated Plainwell Mill Banks Emergency Action objectives are

- *Resuspension Monitoring and Control* – To provide real time water quality data to minimize the potential for residuals release to the Kalamazoo River. This sampling will form the basis for adjusting the floodplain and near shore sediment excavation activities as necessary.
- *Dewatering System Discharge Monitoring* – To verify the dewatering system effectiveness and document compliance with substantive requirements of the National Pollutant Discharge Elimination System permit.
- *Residuals Excavation Confirmation Sampling* – To confirm PCB concentrations in bank soils, floodplain soils and sediments remaining in the Plainwell mill bank adjacent to the Kalamazoo River are below 4 mg/kg and 1 mg/kg respectively after completion of emergency response removal activities.
- *Erosion Control and Vegetation Monitoring* – To ensure stabilization of the river bank erosion control system to limit erosion losses under moderate stresses until the long term erosion control plan is developed independently by the City of Plainwell for future land use.

3.1 Resuspension Monitoring and Control

As described previously the design of these excavation actions has been developed to limit potential adverse effects from this excavation work by adapting the residual removal activities to site conditions in construction zones with similar physical configurations along the banks. Working in pre identified construction zones will allow placement of silt curtains and monitoring stations closer to the excavation areas and will facilitate modifications in the work process within smaller more manageable areas. The other safeguard is to implement a resuspension monitoring program that provides real time water quality data for use in assessing a need for operational changes that minimize any unintended secondary effects.

PCB waster samples will be collected in accordance with the procedures outlined in the addended Multi Area Field Sampling Plan (FSP) for the site. Analysis will be performed by Weyerhaeuser Analytical Testing Services in accordance with the addended Multi Area Quality Assurance Project Plan (QAPP). If

the turbidity from the downstream station exceeds the greater of twice the measured turbidity at the upstream sampling location or 15 NTUs (as discussed with USEPA representatives) a series of contingency responses will be implemented to minimize possible adverse impacts. The turbidity data will also be supplemented by weekly PCB analyses and visual inspections of the water barriers associated with the residuals isolation area. Specific components of the resuspension monitoring plan that will be performed during actual excavation actions in the Plainwell Mill bank area are summarized in Table 3

The use of turbidity as the real time water quality indicator parameter is based upon the following rationale

Turbidity measurements are rapid, easy to instrument, reliable and commonly used to monitor suspended solids during various residuals excavation projects across the country including the ongoing Plainwell Impoundment TCRA.

- Turbidity has been shown to be well correlated to Total Suspended Solids (Plainwell Impoundment TCRA Design Report, 2007 Figure 5.2). Furthermore, based upon their physical/chemical characteristics, specifically very low water solubility and hydrophobic nature, PCBs will remain associated with solid particles which are measured both as TSS and turbidity. As such, turbidity provides a good surrogate for the potential for PCBs in surface water.

Three YSI Sonde units, each equipped with probes to measure dissolved oxygen and turbidity, will be used to collect the water quality data. The Sonde unit logs the above data at predetermined time intervals. The units will be calibrated, operated, and maintained according to the manufacturer's instructions and will be capable of collecting point turbidity readings from water as deep as 15 feet. The meter(s) will be able to measure turbidity at a resolution of ± 1 nephelometric turbidity unit (NTU). The Sonde units will be placed within a perforated PVC pipe to protect the sensor and anchored to the river bottom. A buoy will be attached to the PVC pipe to mark its location, and the sensor will be connected to a line anchored on shore for security purposes. The Sonde will be set to automatically record turbidity data every 15 minutes. The recorder signal will be relayed through a cable to shore where the data will be downloaded to a portable computer and reviewed at the frequency required in this plan established by the ongoing site activities. Turbidity data will be collected from upstream and downstream of the excavation zone being addressed at that time. All downstream turbidity data will be compared to a target of two times the upstream turbidity reading.

The monitoring equipment will be located approximately 200 and 300 feet downstream of the current work zone and at an upstream location providing representative river turbidity data (distance from the work area may vary depending upon the excavation zone). All monitoring stations will be located as much as possible along the general river flow path past the work area, although the specific locations are subject to change based on field conditions. The most appropriate location for the upstream monitoring station will be further evaluated during site clearing activities to identify placement that considers impacts from the Mill race as well as contributions from the main channel of the Kalamazoo River. Downstream locations will move with each zone. The 200 foot downstream location will act as an early warning of

turbidity increases while the 300 foot downstream location will be used to assess an exceedence
Turbidity readings will be collected from approximately mid depth at all locations

At a minimum turbidity readings will be measured at these times

- prior to placement of any equipment or materials in a work area
- following placement of equipment and materials but prior to clearing and excavation actions
- every hour during excavation actions in the floodplain soils and in river sediments and
- as needed based on in field observations

Visual inspections of the turbidity curtains will be conducted during the residuals excavation activities

The inspections will assess the integrity of the silt curtains looking for proper anchoring positioning and alignment and for physical damage such as rips or tears Results will be recorded in a field notebook If a problem is found work in that area will be modified or cease until the problem is corrected Inspections will be performed at the following times

- daily prior to the start of work
- as required after major modifications or maintenance of the structure and
- as required per turbidity exceedence corrective actions

A contingency plan has been developed to address turbidity exceedences The plan will be implemented if the confirmed turbidity reading at the 300 foot downstream monitoring location is more than two times the upstream turbidity Data will be considered confirmed if a turbidity plume emanating from the excavation zone is visible or if three sets of duplicate turbidity samples taken at 15 minute increments both up and downstream of the excavation area consistently confirm the elevated turbidity above the target levels The plan calls for the following mitigation actions to identify and eliminate the cause of the exceedence

- Inspection of the area downstream of the excavation site and the turbidity curtains and repair as needed
- Implementation of troubleshooting measures based on field conditions to reduce turbidity (i.e. re securing or re positioning the silt curtain modifying the excavation approach etc)
- Finally excavation rates will be reduced or procedures modified until the turbidity has returned to acceptable levels

If an unexpected turbidity exceedence continues to occur or an equipment failure occurs additional turbidity and PCB samples may be collected based on the severity of the exceedence and on in field professional judgment Furthermore additional inspections may be conducted during unexpected or uncontrolled events

Surface water samples will be collected for PCB analysis on a weekly basis to support the turbidity monitoring information Whenever possible sampling will be conducted on the same day of the week

and at approximately the same time during the day – samples will be collected approximately 2 hours after the start of excavation activities for the particular day. Samples will be co located with the turbidity monitoring locations upstream and 300 feet downstream of the excavation area. Additional samples will be collected for PCB analysis as needed based upon in field observations.

PCB water samples will be collected in accordance with the procedures outlined in the FSP for the site. Analysis will be performed by Weyerhaeuser Analytical Testing Services (WATS) (or other qualified and approved laboratory) in accordance with the site specific QAPP.

3.2 Discharge Monitoring

Wastewater will be generated during soil/paper residual dewatering activities. Water draining from the saturated soil/paper residuals will be collected on the dewatering/staging pad, treated and discharged to the Kalamazoo River. Temporary sediment containment will be installed to manage decontamination water and storm water runoff on the dewatering/staging pad and limit uncontrolled discharges to the Kalamazoo River. The impacted water will be monitored to ensure compliance with the permit equivalency requirements. The dewatering system discharge monitoring plan is also summarized in Table 3.

Water samples will be taken from three locations:

- the influent sampling point located just upstream of the fabric filter column
- an intermediate stage sampling point located between the first and second granular activated carbon trains and
- the effluent sampling point located just downstream of the holding tank

Samples will be collected at the following times:

- twice per week while the system is operating and
- as needed based on in field conditions

Influent and intermediate samples will be analyzed for PCBs and effluent samples will be analyzed for PCBs, Total Suspended Solids (TSS) and Phosphorus. All of the samples will be collected and handled in accordance with the site FSP. Samples for PCBs, TSS and total phosphorus as P will be sent to WATS for analysis following procedures documented in the approved QAPP. Samples for TSS and selected PCBs will be expedited to obtain a 2 to 5 day turn around time if needed. Additional sampling or inspections may be conducted based on conditions encountered in the field. Monitoring results will be documented in a field notebook and validated results will be reported to the agency in monthly progress reports during field activities and in the Mill Banks Emergency Action Documentation Report. If the reported concentrations appear to exceed the targeted effluent concentrations, the effluent will be stored and retested prior to discharge.

3.3 Residuals Excavation Documentation Sampling

Residuals excavation on shore will be complete when visual residuals are removed and composite sample concentrations of PCBs in the bank soils are less than 4 mg/kg or a Geofabric covered by 6 inches of layer of clean soil or river run stone is placed over the excavated areas (see Section 2.3.2). For floodplain soils/near shore sediments excavation is complete when the original river bottom is encountered or when the visual residuals are not present in the sediment samples and the removal is confirmed by the results from confirming composite samples near shore contain PCB concentrations adjacent to shore of less than 1 mg/kg.

Sampling of underlying soil or sediment will be performed in each construction zone to document post excavation PCB surface concentrations remaining in the Mill bank floodplain soil, bank soil, and sediments. Samples will be collected in small gridded areas to confirm excavation targets have been met prior to bank reconfiguration. These initial soil and sediment confirmation samples will be expedited at the laboratory with sample turn around times of 48 hours after receipt of samples. Based on conditions in the field and the status of the remedial activities, intermediate samples may be collected for expedited analysis in order to obtain data that will be used to improve excavation performance.

The documentation sampling for the Plainwell Mill Banks Emergency Action will be conducted in a manner similar to the confirmation sampling being conducted under the Plainwell Impoundment TCRA, but the proposed sampling plan can be adapted for biased sampling if a reliable visual indicator is apparent in the sampled media. Confirmation samples will be collected from construction zones A, B, C, and D described in this report immediately following completion of excavation activities. A grid will be established along the excavation area to facilitate the collection of a representative group of samples. The grid arrangement will run parallel with the river bank. The overall number, shape, and size of the grids may be modified depending on the target area size and shape. A typical floodplain soils/near shore sediment grid will cover approximately 5,000 square feet and will be broken up into 20 nodes (10 feet by 25 feet). A typical bank removal grid will cover approximately 1,000 square feet and will be divided into 20 nodes (5 feet by 10 feet).

A minimum of five nodes from the grid will be randomly selected for sampling using a random number generator/table or other approved means. The random pattern may be modified in the field (in consultation with oversight personnel) to ensure aerial distribution of the samples throughout the grid zone. Once the sample nodes have been identified within each grid, confirmatory sampling will be performed. Each node will be sampled, visually inspected for the presence of residuals, and, if no residuals are observed, sent for laboratory analysis to quantitatively confirm that excavation is complete. If residuals are visually observed in the samples, then the original samples will be discarded, additional soils and/or sediment (targeting an initial 6 inch depth) will be excavated, and a new set of samples will be collected. Samples will be collected by hand using a trowel or similar tool as described in the FSP from the top 6 inches of the soil or sediment surface. Samples will be analyzed at WATS following

procedures documented in the QAPP. If laboratory data confirm that the composite sample PCB concentration for a grid is less than or equal to the target concentration, the excavation activities will be considered complete. Where laboratory data indicates concentrations of PCBs greater than the target concentration, an additional 6 inches of material will be removed in the grid area and the area will be resampled as described above.

For bank removal areas, the target concentration will be 4 mg/kg. If after one round of additional excavation and sampling, the lab results are not less than 4 mg/kg, then the excavation area will be covered with 6 inches of clean soil or river run stone unless it is decided by Weyerhaeuser, USEPA, and MDEQ that additional excavation is necessary. For floodplain soils near the river and near shore sediments, the target concentration will be 1 mg/kg. Re-excavation and sampling in a grid area will continue until the target concentration is met or until the natural river bottom is reached.

3.4 Erosion Control and Vegetation Monitoring

Temporary erosion and sediment controls will be installed prior to initiation of excavation activities as necessary in each of the four distinct excavation construction zones described in Section 2.4. Weyerhaeuser and the City of Plainwell are working together to prepare the Mill banks area for a future riverwalk whereby permanent erosion and sediment control measures will be implemented. Primary erosion control measures will consist of reconfiguring the banks to limit active erosion through more stable slopes, placement of small stone rip rap along the banks exposed to higher velocities (Zone C), and at the toe of all excavated banks. Additional data on the interim erosion control plan is presented in Appendix D. Interim erosion control measures will be maintained and inspected according to recommended best management practices. Bank reconfiguration activities are targeted to provide banks that have a comparable or better stability against erosion than currently exist. At the completion of the excavation and reconfiguration actions, the bank will be re-surveyed and then compared to pre-excavation survey results to confirm that the erosion protection goals have been met. These bank areas will be monitored annually for 2 years for signs of erosion or bank failure.

Monitoring activities will include conducting a visual inspection of bank conditions, developing written inspection logs, and photographing any conditions of note, including:

- loss of temporary armoring materials (i.e., loss of stones, erosion control matting, and/or vegetation)
- obvious signs of gullying or rill erosion
- signs of bank undercutting or sloughing (i.e., cracking or bulging visible at the surface)
- any obvious signs of lateral bank movement (i.e., due to erosion or deposition) and
- any signs of stressed or minimal vegetation growth

Observed conditions of note will be recorded in a monitoring inspection log and photographed at the time of inspection. If areas of significant erosion or bank failure are observed during the monitoring period, the need for adaptive management or bank repair activities will be discussed with the appropriate

oversight agencies. Vegetation issues will be addressed with reseeding or mulching as necessary. Inspection logs and photographs will be provided to the USEPA and MDEQ for review and discussion within 1 month following completion of the monitoring event.

Table 3
Monitoring Plan for Plainwell Mill Banks Emergency Action

Parameter	Sample Type**	Sample Location*	Minimum Frequency
Resuspension Monitoring and Control			
Turbidity	Instantaneous sample collection using auto sampler with resolution of +/- 1 NTU	Mid-depth, upstream (exact location to be determined in field) of construction site along the general flow path going past the removal area; samples collected from temporary in-river sample station.	<ul style="list-style-type: none"> - Prior to and following equipment placement in the work area - Hourly while work is performed - As needed based on field conditions
		Mid-depth, approximately 200 and 300 feet downstream of construction site along the general flow path past the removal area; samples collected from temporary in-river sample station.	
PCBs	Grab sample, analyzed at off-site lab, quantification limit of 0.2 ug/L	Mid-depth, upstream of construction site (co-located with turbidity sample); samples collected from temporary in-river sample station.	<ul style="list-style-type: none"> - Once per week (on the same day where possible, 2 hours after the start of removal activities)
		Mid-depth, approximately 300 feet downstream (co-located with Turbidity sample); samples collected from temporary in-river sample station.	
Inspections	Visual, looking for integrity and proper function	Entire bank area and silt curtains surrounding the excavation area	<ul style="list-style-type: none"> - Daily prior to start of work - As required, after major modifications or maintenance of the structure - As required, per turbidity exceedence mitigation procedures.
Wastewater Treatment System Discharge Monitoring			
Flow	Record flow meter reading	Effluent to Outfall 001	Daily
Total PCBs	Grab sample per EPA Method 608. Analyzed at off-site lab; quantification limit of 0.2 ug/L	Influent, Intermediate Stage and Effluent to Outfall 001	Twice per week (on the same day where possible, 2 hours after the start of removal activities)
TSS	Grab sample per EPA Method 160.2. Analyzed at off-site lab; quantification limit of 5 mg/L	Effluent to Outfall 001	Twice per week (on the same day where possible, 2 hours after the start of removal activities)
Total Phosphorus as P	Grab sample per EPA Method 365.3. Analyzed at off-site lab; quantification limit of 0.2 ug/L	Effluent to Outfall 001	Twice per week (on the same day where possible, 2 hours after the start of removal activities)
Equipment Inspection	Visual; looking for equipment integrity and proper function	Entire system	Three times per week
Outfall Observation	Visual; looking for abnormal discharge (i.e., color, clarity, etc)	Outfall 001	Daily (when WTP is operational)
Residuals Excavation Documentation Sampling			
PCBs	Grab; analyzed at an off-site lab	Removal area zones divided into a grid; minimum of five locations randomly selected from the grid for sampling	After initial removal completion then after each successive removal pass until sample results are below target concentration.
Erosion Control and Vegetation Monitoring			
Inspections	Visual; looking for detrimental erosion or bank failure	Erosion protection along the Plainwell Mill banks	Annually until the City of Plainwell implements independent Erosion Control Plan

* Locations are subject to change based on conditions encountered in the field.

** See the FSP for specific sampling procedures and equipment.

Section 4

Project Schedule

This section provides details about the anticipated construction schedule sequencing and duration of each task and phase of the project. The preliminary construction schedule is presented in Figure 12 and presents the sequencing and duration of specific work tasks anticipated for implementation. Section 4.2 discusses important assumptions and potential constraints that may impact the actual timing and duration of construction and overall project implementation.

4.1 Summary of Construction Activities and Schedule

Construction activities are currently scheduled to begin during the middle of September 2007. Based on current assumptions, approximately 13 weeks of construction activities will be needed to complete the Emergency Action tasks with the work anticipated to continue through December or until weather conditions limit activities. Certain restoration activities, such as planting of seasonally dependent vegetation species, may need to occur in the spring or summer of 2008.

Construction activities will be sequenced and completed in the four construction zones identified on Figure 1 and Figure 3 and discussed in Section 2. Excavation work will begin at the most western construction zone (Zone A) where the majority of residuals are located and proceed to the east. Throughout the construction phases, the work activities will be refined and modified as needed in response to field conditions and in consultation with USEPA and MDEQ. As work progresses from one construction zone to another, a more formalized review process will be conducted with agency representatives, Weyerhaeuser, and the City to determine the best approaches planned for the next construction zone. Bank stability, weather, and river conditions, projected times for excavation completion, utility impacts, and other unanticipated conditions will be reviewed. Then the potentially modified approach and schedule for the next construction zone actions will be determined and implemented. For the purposes of the proposed schedule (Figure 12), the review and any modifications will be completed and construction in the next zone initiated within 1 week after completion of work in the prior zone.

Construction activities in each zone are expected to last 1 to 2 weeks based on preliminary projections of production rates and conditions expected to be encountered in the field. Once construction work is completed in a zone, the bank stabilization and other restoration activities at that location can begin.

4.2 Potential Impacts to Construction Schedule and Sequencing

Specifically, and as shown on Figure 12, the project schedule has been based on an assumed construction start date of September 14, 2007, which will potentially allow enough time for completion of construction.

tasks by December 2007. Delays in the construction start date will adversely affect all other subsequent or dependent tasks in the sequence and could prevent the completion of construction activities in 2007.

The preliminary construction schedule summarized above and provided on Figure 12 was prepared assuming favorable weather conditions and anticipated optimal sediment/soil removal rates. Thus, it is important to note that the schedule sequencing and duration of any one or more construction components may be affected by inclement weather, high flow events, technical adjustments to the design, delays in obtaining confirmation sample results, and unforeseen agency requirements or other factors largely outside the control of Weyerhaeuser. For example, an early winter could impact the completion dates for the project. Restoration activities also are subject to weather and seasonal conditions since most plant species cannot be successfully planted or germinated late in the fall season. This may result in some restoration components being delayed until the appropriate season or weather conditions. In addition, unforeseen conditions encountered within each zone may modify the schedule for that zone as well as the design approach for the next zone.

To manage these potential schedule impacts, an adaptive management approach has been integrated into the process to handle schedule modifications. This adaptive approach consists of the on-going dialogue with agency representatives and the built-in review process between zones to allow modification of construction approaches or timing and thus accommodate conditions that influence the schedule.

Section 5

References

Arcadis BBL 2007 Former Plainwell Impoundment Time Critical Removal Action Design Report

Consumers Energy 2007 Land Use Restrictions for Consumers Energy Company Electric Line Easements

Mikula D and Croskey H 2005 Soil Erosion and Sediment Control Training Manual

Plainwell Michigan 2007 Meeting Notes from the Plainwell Mill Redevelopment Plan Development Forum January 31 2007



LEGEND

Hand Auger Locations- Residual Thickness (ft)

- 0.0 - 0.1
- 0.2 - 0.5
- 0.6 - 1.0
- 1.1 - 1.5
- 1.6 - 2.0
- GeoProbe Locations (Soil)
- Sediment Locations (SedimentI)
- Outfall Locations

NOTES

- Conditions as observed the week of 7/16/07

0 200 400
Feet

1 inch equals 200 feet



Zone	Bank Length (ft)	Estimated Volume (yd ³)
Zone A	600	2,600 to 3,650
Zone B	700	360 to 400
Zone C	650	550 to 600
Zone D	650	310 to 350

PROJECT: WEYERHAEUSER COMPANY KALAMAZOO RIVER SUPERFUND SITE		
SHEET TITLE: HAND AUGER AND GEOPROBE LOCATIONS PLAINWELL MILL PROPERTY AND RIVERBANK		
DRAWN BY: WEBER N	SCALE: AS NOTED	PROJ. NO.: 00-05116.02
CHECKED BY:		FILE NO.: 51160207
APPROVED BY:	DATE PRINTED: 1/11/2008	FIGURE 1
DATE: JANUARY 2008		



150 N. Patrick Blvd., Suite 180
Brookfield, WI 53045-5854
Phone: 262-879-1212
Fax: 262-879-1220

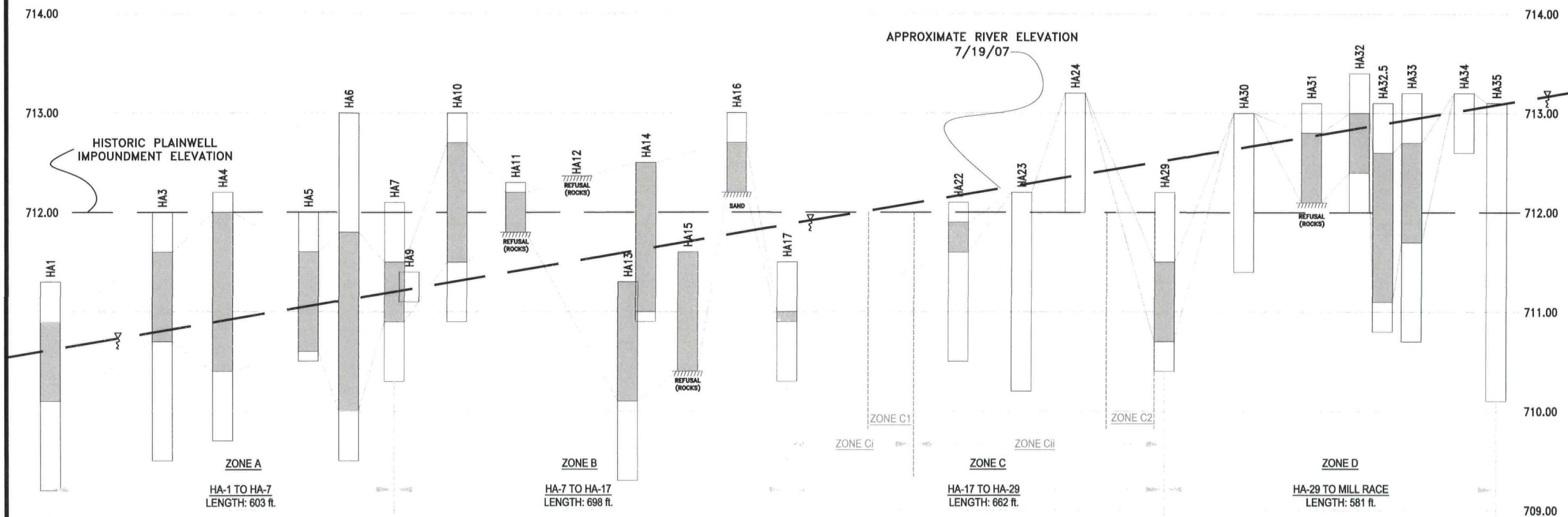


FIGURE DESCRIPTION:

This figure shows the thickness of residuals in those hand auger locations nearest the Kalamazoo River along the Plainwell Mill Bank. All hand auger locations were surveyed to determine an actual elevation. Using the survey elevations and boring logs the residual thicknesses and depths were placed on this figure appropriately. The dark dashed line indicates the approximate river elevation on 7/19/07 in comparison with the hand auger elevations. The lighter dashed line at 712 ft indicates the historic Plainwell Impoundment elevation

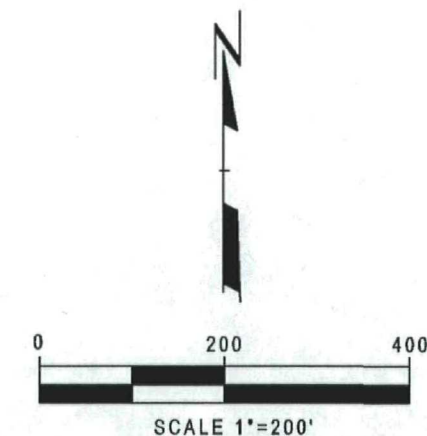
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 APPROVED BY:
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 PROJ. # 5130.02
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Pen Table - K:\CADNET2\TBL\MSV8Default7000_PDF.tbl
Levels On - 1-63



APPROXIMATE EXTENT OF EMERGENCY ACTION
(SEE FIGURES 4-7 FOR ZONE DETAILS)



PROJECT: **WEYERHAEUSER PLAINWELL MILL BANKS
EMERGENCY RESPONSE PLAN DESIGN REPORT
PLAINWELL, MI**

SHEET TITLE:

PROJECT SITE PLAN

DRAWN BY:	fiebran
CHECKED BY:	
APPROVED BY:	
DATE:	January 2008

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	1"=200'
	DATE PRINTED:

PROJ. NO.	5130.02
FILE NO.	siteplan.plt

FIGURE 3

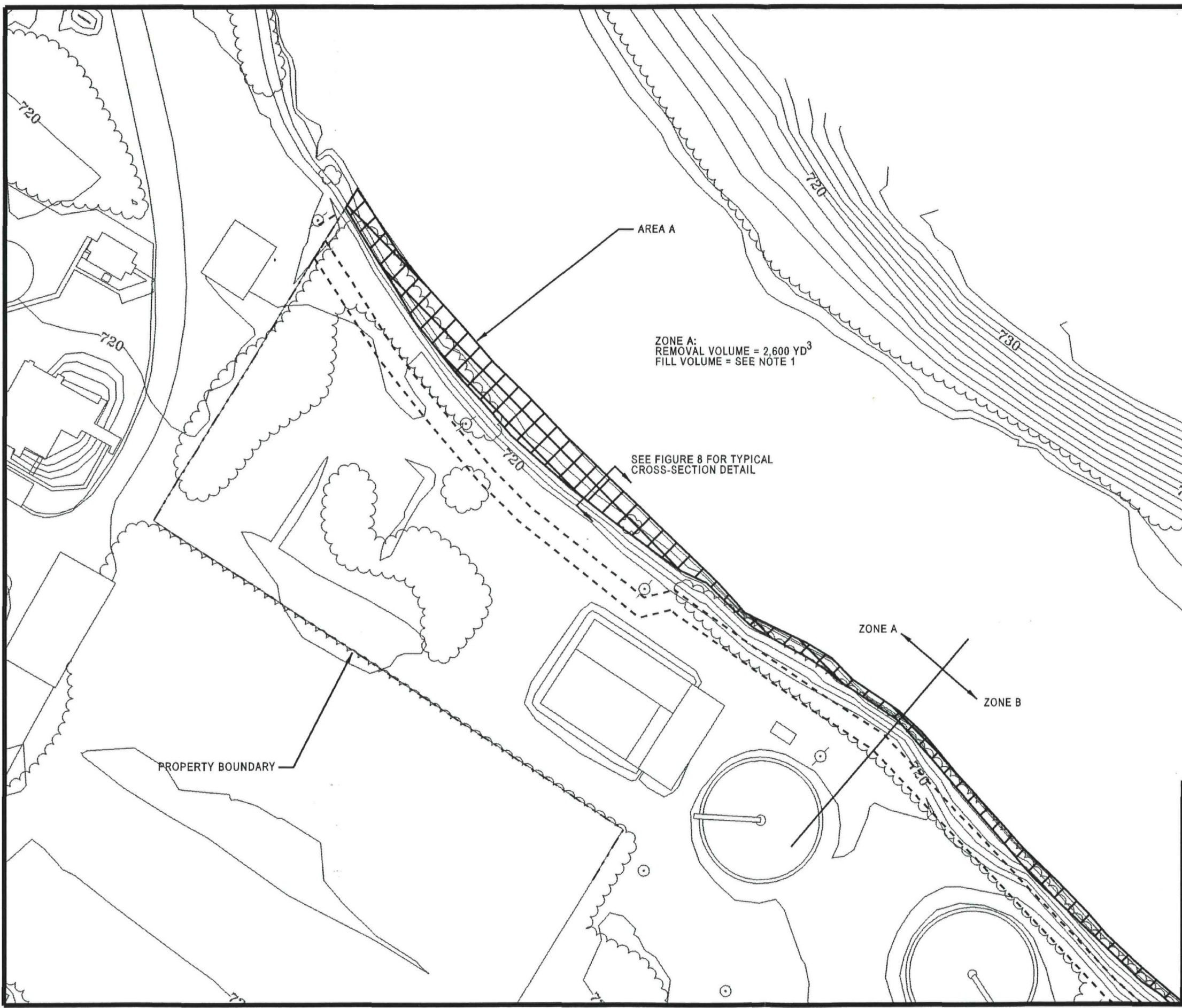
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744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

Levels
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 (2) 1-63
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 (4) 1-63

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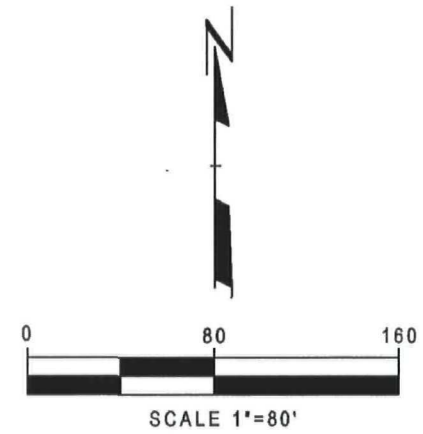


LEGEND

	APPROXIMATE EXTENT OF BANK REWORK & SOIL/RESIDUAL EXCAVATION
	APPROXIMATE EXTENT OF WORK PLATFORM
	UTILITY POLE

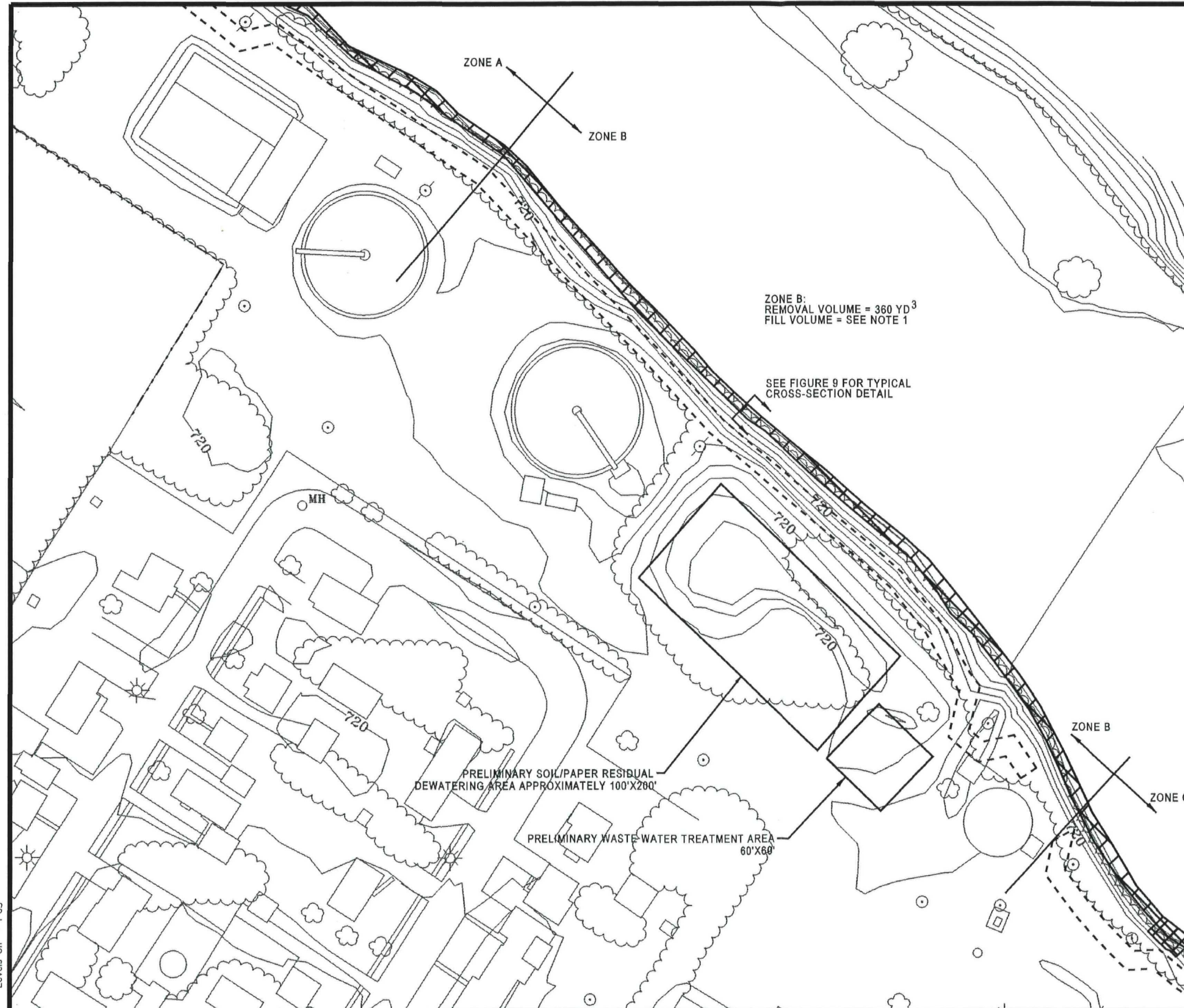
NOTE

1. RIP-RAP WILL BE PLACED IN EXCAVATED AREA AS NECESSARY TO STABILIZE BANKS. VOLUME TO BE DETERMINED IN THE FIELD.



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CHECKED BY:		FILE NO. zone_a.plt
APPROVED BY:	DATE PRINTED:	FIGURE 4
DATE: January 2008		
 744 Heartland Trail Madison, WI 53717-1934 P.O. Box 8923 53708-8923 Phone: 608-831-4444 Fax: 608-831-3334		

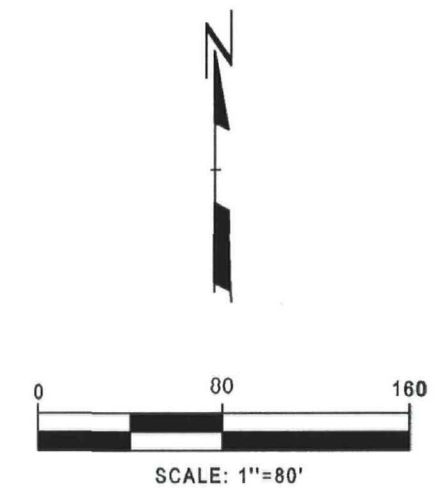
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Pen Table	K:\ACAD\ET\TBL\MSV8Default7000_PDF.tbl
Levels	1-63



9

NOTE

1. RIP-RAP WILL BE PLACED IN EXCAVATED AREA AS NECESSARY TO STABILIZE BANKS. VOLUME TO BE DETERMINED IN THE FIELD.



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APPROVED BY:	DATE PRINTED:	FIGURE 5
DATE: January 2008		

RMT

744 Heartland Trail
Madison, WI 53717-1934

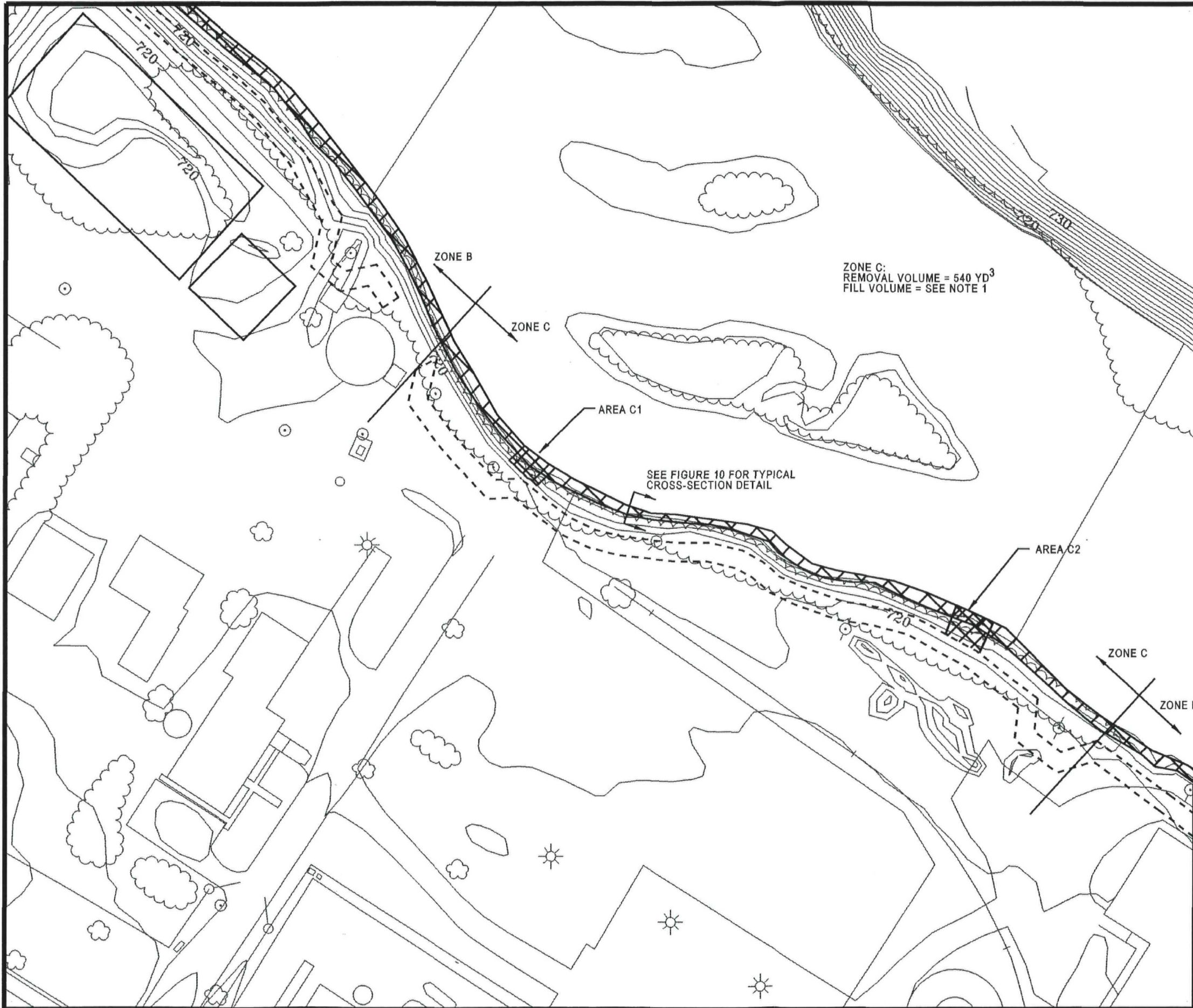
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

Levels
(1) 1-63
(2) 1-57, -16, -18, -21, -23, -25, -42
(3) 1-63
(4) 1-63

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Ref. File 2 - J:\05130\02\mill bmc033005.dgn
Ref. File 3 - J:\05130\02\surface mill.dgn
Ref. File 4 - J:\05130\02\bmrrmt.DGN

Reference File
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Plot
Design
Plot File
Pen Table
Levels On



LEGEND

-  APPROXIMATE EXTENT OF BANK REWORK & SOIL/RESIDUAL EXCAVATION
-  APPROXIMATE EXTENT OF WORK PLATFORM
-  UTILITY POLE

NOTE

1. RIP-RAP WILL BE PLACED IN EXCAVATED AREA AS NECESSARY TO STABILIZE BANKS. VOLUME TO BE DETERMINED IN THE FIELD.

PROJECT: **WEYERHAEUSER PLAINWELL MILL BANKS
EMERGENCY RESPONSE PLAN DESIGN REPORT
PLAINWELL, MI**

SHEET TITLE:

ZONE C

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DATE: AUGUST 2007		

RMT.

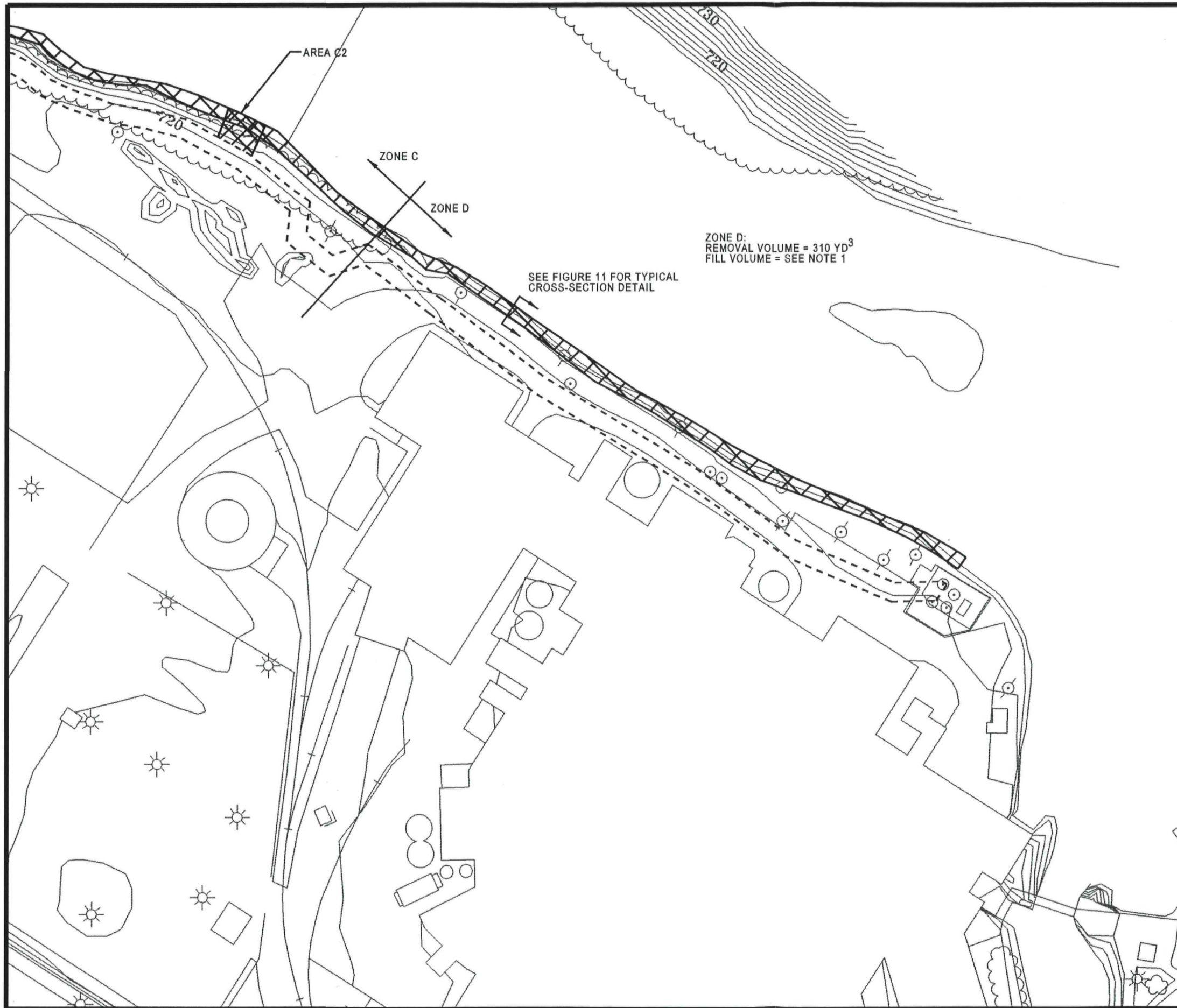
744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

Levels
(1) 1-63
(2) 1-5,7-16,18-21,23-25,42
(3) 1-63
(4) 1-63

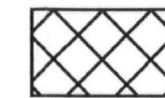
Logical Names
(1) bdr
(2) bmc
(3) sur
(4) RF3

Reference File
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Ref. File 2 - J:\05130\02\millbmc033005.dgn
Ref. File 3 - J:\05130\02\surface mill.dgn
Ref. File 4 - J:\05130\02\bmrrmt.DGN

Plot
Design 1 - J:\05130\02\zone-d.plt
fleurantPlot Date - Thu Aug 30 09:09:21 2007
Plot File - J:\05130\02\zone.dprt
Pen Table - K:\CADNET2\TBL\MSV8Default7000_PDF.tbl
Levels On - 1-63



LEGEND



APPROXIMATE EXTENT OF BANK
REWORK & SOIL/RESIDUAL
EXCAVATION



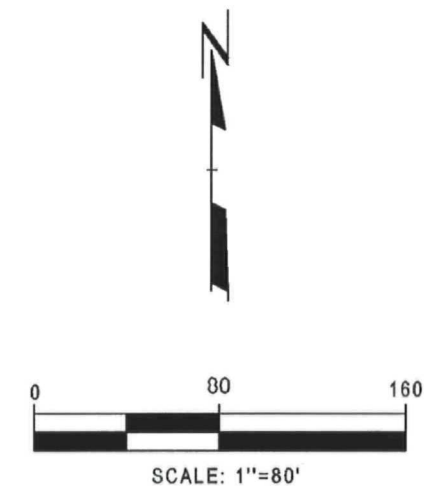
APPROXIMATE EXTENT OF
WORK PLATFORM



UTILITY POLE

NOTE

1. RIP-RAP WILL BE PLACED IN EXCAVATED AREA AS NECESSARY TO STABILIZE BANKS. VOLUME TO BE DETERMINED IN THE FIELD.



PROJECT: **WEYERHAEUSER PLAINWELL MILL BANKS
EMERGENCY RESPONSE PLAN DESIGN REPORT
PLAINWELL, MI**

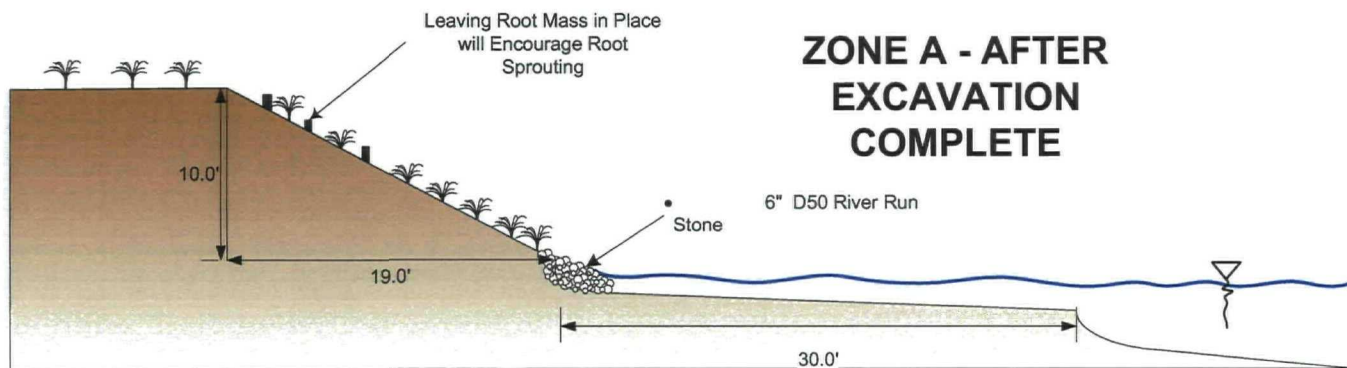
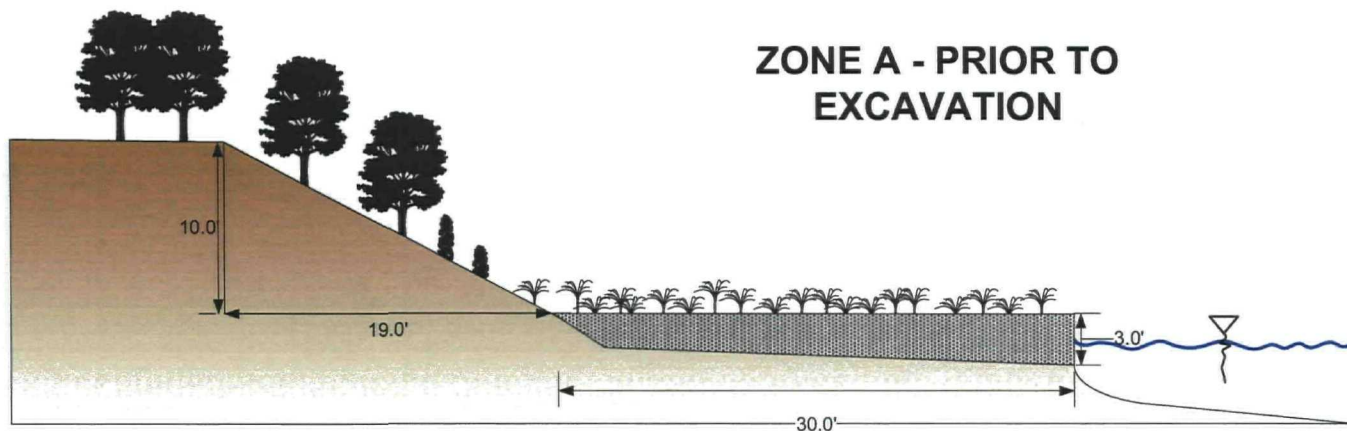
SHEET TITLE:

ZONE D

DRAWN BY:	fleurant	SCALE:	1"=80'	PROJ. NO.	5130.02
CHECKED BY:				FILE NO.	zone_d.plt
APPROVED BY:		DATE PRINTED:		FIGURE 7	
DATE:	January 2008				

RMT

744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334



LEGEND

Approximate Residuals Location

Typical Zone A Cross Section

NOTE:

1. Bank slopes and floodplain width along this reach vary from location to location.
2. Regrade bank slopes as necessary where bank is disturbed.

PROJECT: **WEYERHAEUSER COMPANY
PLAINWELL MILL BANKS EMERGENCY ACTION**

SHEET TITLE: **CONCEPTUAL DESIGN FOR ZONE A
BANK RECONFIGURATION**

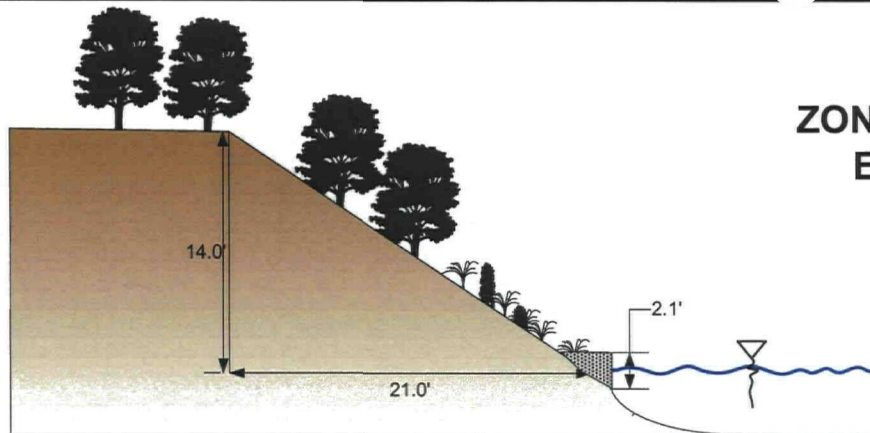
DATE: JANUARY 2008

FINAL

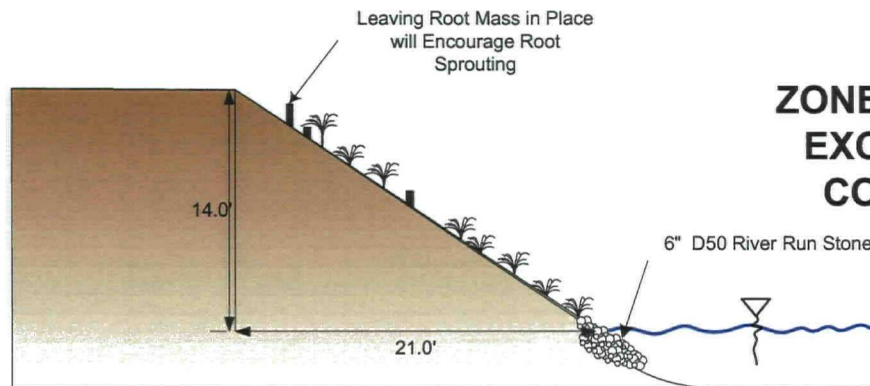
DRAWN BY: NCW

FIGURE 8

RMT



**ZONE B - PRIOR TO
EXCAVATION**



**ZONE B - AFTER
EXCAVATION
COMPLETE**


LEGEND

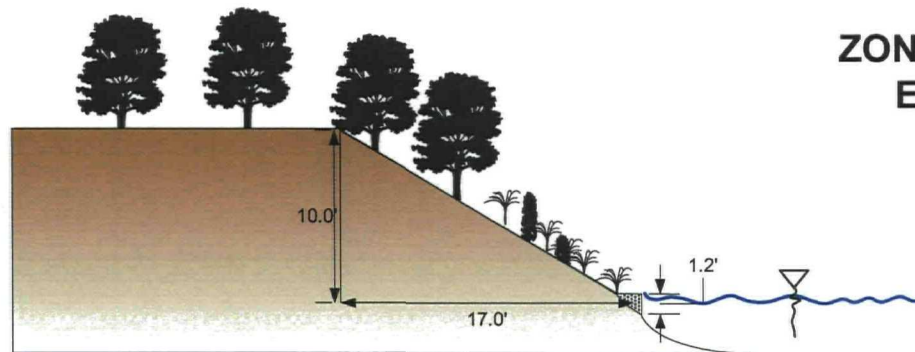
 Approximate Residuals Location

Typical Zone B Cross Section

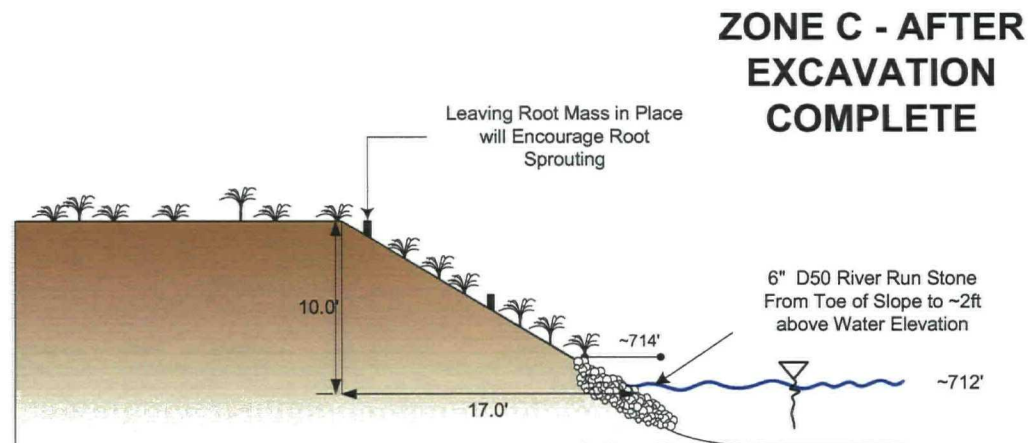
NOTE:

1. Bank slopes vary along this reach from location to location.
2. Regrade bank slopes as necessary where bank is disturbed.
3. Residuals estimated to be from 0 to 4 feet in width.

PROJECT: WEYERHAEUSER COMPANY PLAINWELL MILL BANKS EMERGENCY ACTION	
SHEET TITLE: CONCEPTUAL DESIGN FOR ZONE B BANK RECONFIGURATION	
DATE: JANUARY 2008	FINAL
DRAWN BY: NCW	FIGURE 9
	



**ZONE C - PRIOR TO
EXCAVATION**



**ZONE C - AFTER
EXCAVATION
COMPLETE**


LEGEND

 Approximate Residuals Location

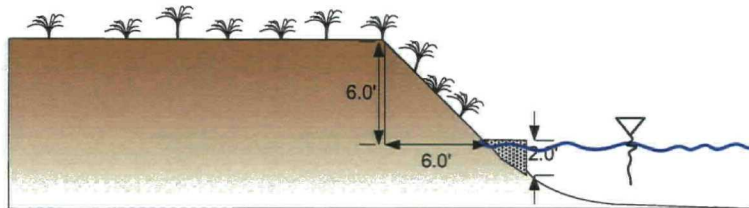
Typical Zone C Cross Section

NOTE:

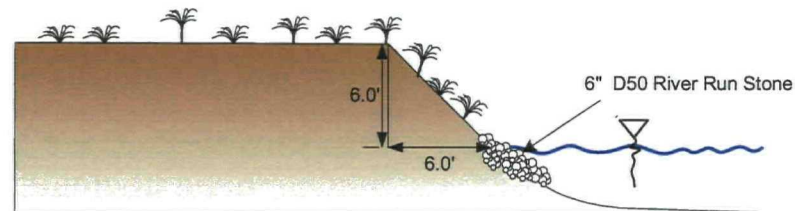
1. Bank slopes vary along this reach and may be as steep as a 1:1 slope in certain locations.
2. Regrade bank slopes as necessary where bank is disturbed.
3. Residuals estimated to be from 0 to 4 feet in width.

PROJECT:		WEYERHAEUSER COMPANY PLAINWELL MILL BANKS EMERGENCY ACTION	
SHEET TITLE:		CONCEPTUAL DESIGN FOR ZONE C BANK RECONFIGURATION	
DATE: JANUARY 2008	FINAL	FIGURE 10	
DRAWN BY: NCW			
			

ZONE D - PRIOR TO EXCAVATION



ZONE D - AFTER EXCAVATION COMPLETE



LEGEND

 Approximate Residuals Location

Typical Zone D Cross Section

NOTE:

1. Bank slopes vary along this reach from location to location.
2. Regrade bank slopes as necessary where bank is disturbed.
3. Residuals estimated to be from 0 to 4 feet in width.


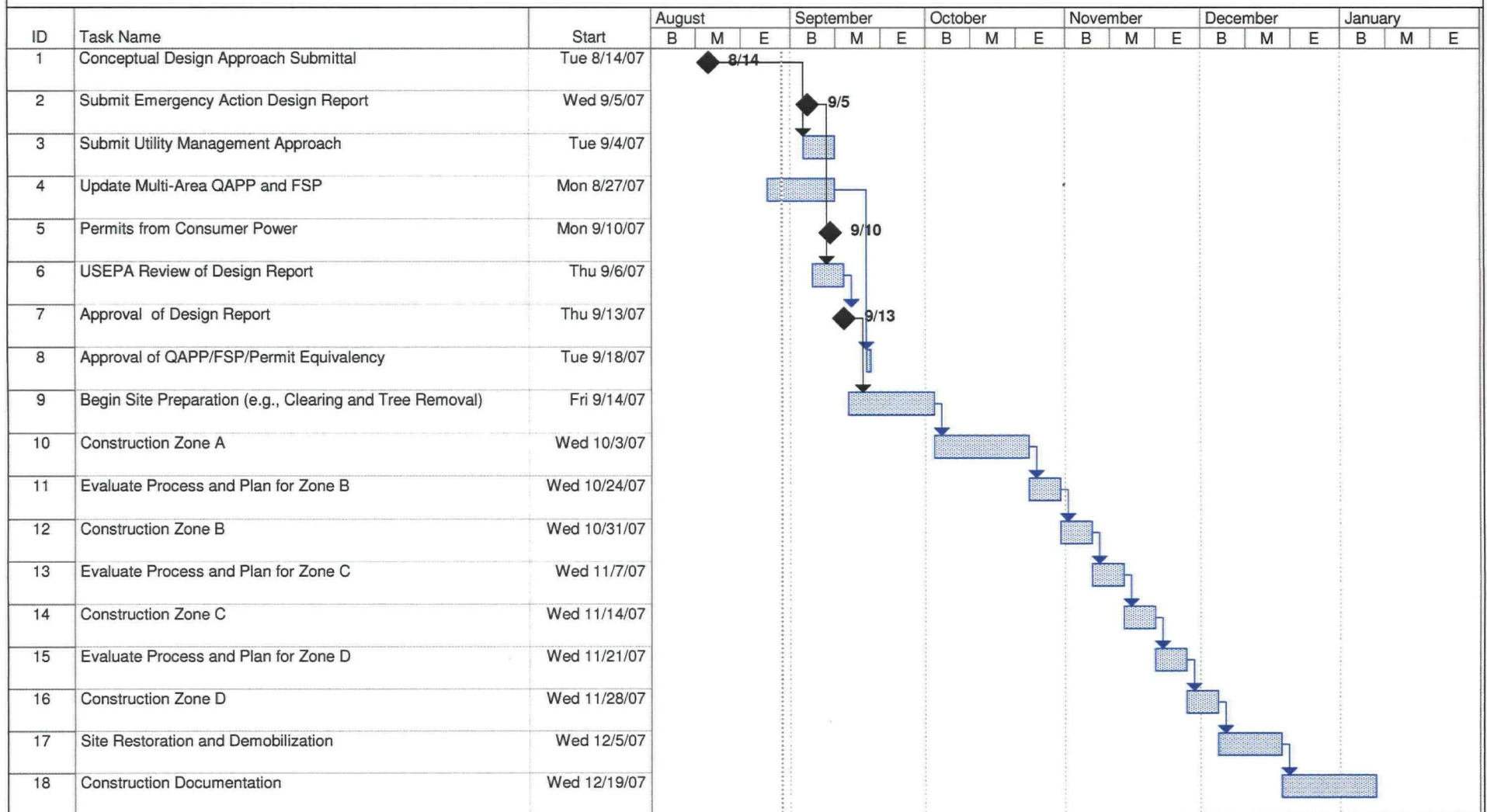
PROJECT:		
WEYERHAEUSER COMPANY PLAINWELL MILL BANKS EMERGENCY ACTION		
SHEET TITLE:		
CONCEPTUAL DESIGN FOR ZONE D BANK RECONFIGURATION		
DATE: JANUARY 2008	FINAL	FIGURE 11
DRAWN BY: NCW		
		

Figure 12
Plainwell Mill Banks Emergency Action Implementation Schedule



Project: Plainwell
Date: Thu 8/30/07

Task



Rolled Up Task



External Tasks



Progress



Rolled Up Milestone



Project Summary



Milestone



Rolled Up Progress



Group By Summary



Summary



Split



Figure 12
Plainwell Mill Banks Emergency Action Implementation Schedule

3 Submit Utility Management Approach

Assumes Utility agreement can be reached within one week

9 Begin Site Preparation (e.g., Clearing and Tree Removal)

Assumes approval of Design Report, QAPP, FSP and NPDES Permit Equivalency by 9/10/07

Appendix A

Correspondence

- Emergency Response for Plainwell Mill Banks Approval Letter from Sam Chummar USEPA (June 29 2007)
- QAPP Approval Letter from Michael Berkoff USEPA (July 24 2007)
- Work Plan and FSP Approval Letter from Michael Berkoff USEPA (August 3 2007)
- Plainwell Mill Banks Investigation Approval (July 16 2007) and Revised Final DQO Memo (August 21 2007)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF SR-6J

VIA ELECTRONIC MAIL AND USPS

RECEIVED

June 29, 2007

JUL 10 2007

Jennifer Hale
Environment Health & Safety WTC 2G2
P O Box 9777
Federal Way WA 98063-9777

ENVIRONMENTAL

Re Emergency Response for Plainwell Mill Banks under United States-Weyerhaeuser
Company Consent Decree Docket No 1 05CV003

Dear Ms Hale

The United States Environmental Protection Agency Region 5 (Region 5) has reviewed Weyerhaeuser's proposal to conduct emergency response actions to "prevent, abate or minimize" a potential release of Waste Material from the banks of the Plainwell Inc Mill Property (Mill) in accordance with Paragraph 67 of the *Consent Decree for the Design and Implementation of Certain Response Actions at Operable Unit #4 and the Plainwell Inc Mill Property of the Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site* Docket No 1 05CV003 (CD) (See letter from Weyerhaeuser to Region 5 dated June 28, 2007)

Region 5 understands that Weyerhaeuser has determined that certain work to be performed in connection with the time-critical removal action at the Plainwell impoundment threatens the release of Waste Material as that term is defined in the CD from the banks of the Mill Based on Weyerhaeuser's determination Region 5 authorizes Weyerhaeuser to conduct such response activities as are necessary to prevent, abate, or minimize" the potential release of Waste Material from the banks of the Mill under paragraph 67 of the CD

Region 5 expects the design concept, data needs, data quality objectives and scope of work for the activities will be submitted for our review and approval in the near future Should you have any questions with regard to any of these tasks please do not hesitate to contact me at 312 886 1434

Sincerely,

Sam Chummar, Remedial Project Manager
U S EPA Region 5
Superfund Division - Remedial Response Branch #1
77 W Jackson Blvd (SR-6J)
Chicago, IL 60604

cc Elleen Furey U S EPA C-14J
James Saric U S EPA SR 6J
Michael Barkoff U S EPA SR 6J
Paul Bucholtz MDEQ

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5**

**77 W JACKSON BOULEVARD
CHICAGO ILLINOIS 60604 3590**

Reply to the Attention Of SR-6J

July 24 2007

Via E mail and Hard Copy

Mr James Hutchens
RMT, Inc
150 North Patrick Boulevard
Suite 180
Brookfield, WI 53045 5854
Fax 262 879 1220

RE Quality Assurance Project Plan
12th Street Landfill Kalamazoo River Superfund Site Operable Unit #04
Plainwell Michigan

Dear Mr Hutchens

The U S EPA has reviewed the Quality Assurance Project Plan for *12th Street Landfill Kalamazoo River Superfund Site Operable Unit #04 Plainwell Michigan*, dated June 2007 (QAPP) U S EPA gives conditional approval to the QAPP provided that certain changes and additions are made Please update the sections of the QAPP to which the following comments are applicable and send copies of these revised sections to U S EPA

- 1 QAPP Worksheet #11 Second paragraph Please provide a reference for the sampling and analytical protocol instead of 'defined later in this document
- 2 QAPP Worksheet #11 Last paragraph Please put an estimate amount of samples which you are planning to collect and analyze to satisfy the project goal
- 3 All Standard Operating Procedures (SOPs) from the Weyerhaeuser Analysis & Testing (WATS) laboratory should be updated and resubmitted for review Standard Operating Procedure (SOP) from

this laboratory should be written in the requirement format according to
EPA QA/G 6 document www.epa.gov/quality/qs_docs/g6_final.pdf

- 4 QAPP Worksheets #34, 35 & 36 Data Verification/Validation Please explain how the data review and verification will be organized in this project to meet the Superfund requirements A 100% laboratory data validation must be performed by an entity independent of the laboratory

Please do not hesitate to me at the below listed number if you have any questions regarding this letter or require any clarification of the comments listed above

Sincerely

Michael Berkoff
Remedial Project Manager
U S EPA Superfund Division
(312) 353 8983

cc via email S Borries, U S EPA
J Saric U S EPA
S Chummar U S EPA
L Schmidt, U S EPA
M Mankowski U S EPA
E, Furey U S EPA
J Haile Weyerhaeuser

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 W JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604 3590**

Reply to the Attention Of SR 6J

August 3 2007

Via E-mail and Hard Copy

Jennifer Hale
Environment Health & Safety WTC 2G2
P O Box 9777
Federal Way WA 98063 9777

RE Work Plan and Field Sampling Plan
12th Street Landfill, Kalamazoo River Superfund Site Operable Unit #04
Plainwell Michigan

Dear Mr Hutchens

The U S EPA has reviewed RMT s response to comments on the Work Plan and the Field Sampling Plan for *12th Street Landfill Kalamazoo River Superfund Site Operable Unit #04 Plainwell Michigan*, dated June, 2007 (WP FSP) U S EPA gives conditional approval to the FSP and the WP based upon the comments in the August 2, 2007 response letter These comments must be incorporated into the Design Report and as applicable into all other documents that are generated as a part of the emergency action U S EPA has concerns about the capacity at the 12th street landfill This has been expressed to RMT via phone conversations and in the July 31 2007 WP/FSP comment letter In your response to that letter you state that detailed capacity estimates for the landfill can be made available to U S EPA Include these estimates in a revised Design Report and in all other pertinent design documents

Please do not hesitate to me at the below listed number if you have any questions regarding this letter or require any clarification of the comments listed above

Sincerely

Michael Berkoff
Remedial Project Manager
U S EPA Superfund Division
(312) 353-8983

cc via email S Borries US EPA
J Saric, US EPA
S Chummar US EPA
L Schmidt US EPA
M Mankowski US EPA
E Furey, US EPA
J Hutchens RMT
P Bucholtz MDEQ

From <Chummar Sam@epamail.epa.gov>
To <jennifer.hale@weyerhaeuser.com>
Date 7/16/2007 6:09 PM
Subject Plainwell Mill Bank Recon and Design Investigation

CC <BUCHOLTP@michigan.gov> <Furey.Eileen@epamail.epa.gov>
<Sarie.James@ep

Jennifer

Region 5 has taken a preliminary look at the Weyerhaeuser Project Memorandum (Plainwell Mill Bank Reconnaissance and Design Investigation) submitted today (July 16, 2007) as well as its revision (submitted also on July 16, 2007) by RMT on behalf of Weyerhaeuser. Though Region 5 still has comments which will be expressed after a more thorough review, Region 5 believes that field work proposed in the document may begin as per your schedule.

Sam Chummar
U.S. EPA Region 5
77 W Jackson (SR 6J)
Chicago, IL 60604
Phone (312) 886 1434
Fax (312) 886 4071



Environment Health & Safety WTC 2G2
PO Box 9777
Federal Way WA 98063-9777
Telephone (253) 924-3746
Fax (253) 924-6182
E-Mail Jennifer.hale@weyerhaeuser.com

August 21 2007

Mr Sam Chummar
Remedial Project Manager
U S Environmental Protection Agency Region 5
77 W Jackson Blvd SR 6
Chicago, IL 60604

**RE Revised Final Plainwell Mill Banks Reconnaissance and Design Investigation Emergency
Response Action, Plainwell Mill banks, Plainwell Michigan (Consent Decree, No 1 05CV003)**

Dear Sam.

Attached for your files is the revised scope of work and data quality objectives for the Plainwell Mill Banks Reconnaissance and Design Investigation. This document incorporates the specific comments that you provided in your July 20, 2007, letter to Weyerhaeuser. We are integrating your general comment on interactions with the City of Plainwell by sending them drafts of our reports prior to submittal to the United States Environmental Protection Agency. The residuals disposal location will be discussed in the Plainwell Banks Design report.

Thank you for your cooperation and assistance on this action. We appreciate your prompt attention matter and look forward to on going discussions regarding the next steps in this action. Please feel free to contact me or Jim Hutchens and Kathy Huibregtse at RMT if you have any questions.

Sincerely

Weyerhaeuser Company

A handwritten signature in cursive script that reads 'Jennifer Hale'.

Jennifer Hale
Environmental Manager

cmk

cc Paul Bucholz
Michael Berkoff
Eileen L. Furey
Jim Seric
Mark Schneider
John Gross
Joe Jackowski



Weyerhaeuser Project Memorandum

Date July 16 2007 (Revised August 21, 2007 per July 20, 2007 letter from USEPA)

To Sam Chummar, USEPA RPM

From Jennifer Hale Weyerhaeuser Company
Kathy Huibregtse, RMT, Inc

cc John Gross Weyerhaeuser Company
Jim Hutchens RMT Inc
Linda Hicken RMT Inc

Subject Plainwell Mill Bank Reconnaissance and Design Investigation
Emergency Response Action, Plainwell Mill Banks Plainwell Michigan

Background

Phase I of the Plainwell Impoundment Time Critical Removal Action (Plainwell TCRA) is being conducted during the summer and fall of 2007. Actions being taken for the Plainwell TCRA could cause a release of hazardous substances from the Plainwell Mill Property. Specifically, Weyerhaeuser understands that conditions along the Kalamazoo River at the former Plainwell impoundment have been determined to represent an imminent and substantial threat to public health and the environment in the February 14, 2007 Enforcement Action Memorandum prepared by the United States Environmental Protection Agency (USEPA) and are thus being addressed as described in a Settlement Agreement with members of the Kalamazoo River Study Group (KRSRG). Upstream of Michigan State Highway 131, specific areas of river bank and floodplain soils have been targeted for removal. Downstream activities include dismantling a portion of the existing Plainwell Dam and relocating the flow of the Kalamazoo River to its original channel.

Future activities may also include removal of additional downstream dams. A 2002 study by USGS suggests that removal of the three downstream dams will increase the slope of the river and river velocity. In two separate assessments of the impacts associated with dam removal, (USGS 2004 and USDA, 2004) both studies concluded that erosion on the toe of the slope will widen the channel, erode the toe of the slope with resultant steeper bank angles. As the undercut expands, the bank sediments are destabilized resulting in bank failure. Weyerhaeuser believes that the presence of paper residuals in the floodplain soils along the Plainwell Mill combined with the increased flow velocity associated with the dam removal completed as part of the Plainwell Impoundment removal action, threatens the potential release of waste material.

In order to prevent, abate, or minimize such a release, Weyerhaeuser proposes to proceed under Paragraph 67 of the Consent Decree with the excavation of residual materials present in the floodplain and bank areas near the river along Plainwell Mill, the reshaping of banks in those locations, and the construction of erosion controls to minimize undercutting. These bank areas are part of the Kalamazoo

Weyerhaeuser Project Memorandum

River Operable Unit Unless otherwise approved by the USEPA specific emergency response work to be performed by Weyerhaeuser to address the threatened release will be designed and performed in a manner that considers the implications of the City of Plainwell's approved land use plan for the Kalamazoo riverfront area, if available and consistent with applicable provisions of the Settlement Agreement and the Former Plainwell Impoundment Time-Critical Removal Action Design Report (Appendix 4 to the Settlement Agreement)

Plainwell Mill Bank Design Investigation Data Quality Objectives

Previous data collected by CDM (2001) Weston (2002) and others have identified visible residuals present in several low lying floodplain areas along the bank of the Plainwell Mill (see Figure 1) Boring logs indicate that typically the visible residuals contain polychlorinated biphenyls (PCBs) concentrations greater than 4 ppm. The purpose of the bank investigation is to determine the horizontal and vertical extent of residuals along the bank of the Plainwell Mill The location of the residuals and their proximity to the Kalamazoo River will be used to assess their potential for causing adverse risk Together the location and the extent of residuals will be used to determine if an emergency action is necessary A detailed discussion of each of the seven steps to support these DQOs is presented in Table 1

Objectives of the Project

- 1 To establish extent of residuals targeted for excavation (if any) in Areas A, B, and C as shown on Figure 1
 - Estimate extent and refine quantity of residuals in floodplain Areas A, B, and C through visual observation of soil samples and survey data
 - Confirm characteristics of banks' subsurface soils and sediment types adjacent to excavation Areas A, B, and C
- 2 To identify conditions in other areas of the banks that may need to be considered during the Plainwell Mill banks Emergency Response
 - Verify the presence and quantity of residuals at locations not included in Areas A, B, and C
 - Collect bank soil samples near outfall locations to determine if residuals are observed
 - Identify conditions along the bank that would impact residuals excavation, bank reshaping or the interface of the banks with future land use

Plainwell Mill Bank Design Investigation Work Scope

- Visual reconnaissance of the bank to focus on obstacles that may hinder any targeted excavation activities and to specifically locate hand auger and Geoprobe sampling locations (with stakes) Items that will be photo-documented if observed include concrete rubble, large rocks, power lines, historic outfalls, debris, etc. Their presence could impact the site activities so identifying these items will assist with final design and implementation of the Emergency Response
- Area A on Figure 1 is a low lying flood plain where residuals are present within the top 1 foot and range in thickness from 1 to 2 feet. Residuals in Area A are close to the river on the floodplain and

Weyerhaeuser Project Memorandum

thus may experience increased erosion due to alterations of the Plainwell Mill impoundment. The horizontal and vertical extent of residuals in the floodplain is defined from past data, the extent of residuals that may be present now and in subsurface soils behind these floodplain residuals is unknown. To accurately document and verify the horizontal and vertical extent of the residuals in Area A, approximately five hand auger samples will be collected to confirm the thickness and extent of residuals.

- Sediment probes or hand augers will also be advanced approximately 5 feet from the bank into the Kalamazoo River along selected bank transects to locate the toe of the bank and to determine if soft sediments remain adjacent to the bank. Four of these transects will be located along Area A and other transects will be placed adjacent to Mill bank areas where residuals are found to exist as bank material. Table 2 summarizes the planned sampling activities in these and other bank locations. All sampling data will be located using handheld Global Positioning System (GPS) measurements as well as horizontal and elevation surveys.
- Areas B and C have been reported to contain residuals with measured PCB concentrations greater than 50 ppm, but the areas are not defined in any dimension and therefore the level of risk is unknown. Activities to better define the presence of residuals in these two locations will include visual assessment of surface and subsurface soils and performance of a detailed survey to establish accurate estimates of horizontal and vertical extent of any observed residuals. Approximately four to five hand augers will be advanced in each area (Areas B and C) to document the vertical and horizontal extent of wastes in these low lying areas. In addition, supplemental hand augers will be advanced at approximately 100 foot spacing intervals the Mill banks between Areas A, B, and C and along the Mill buildings.
- Four former outfall locations have been identified along the bank of the Plainwell Mill. The purpose of each discharge location will be confirmed during the Remedial Investigation (RI) activities after approval of the Remedial Investigation/Feasibility Study work plan. Based upon location and known site history, three of the four outfalls are likely storm water discharge locations and one is apparently the effluent discharge from the wastewater treatment plant. A sediment probe or hand auger will be advanced at the point of discharge to determine if residuals exist near or in the outfalls that could functionally become an on going source to the river. If additional outfalls are identified during the visual reconnaissance, sediment probes or hand augers will also be placed at those locations.
- In addition to the hand auger sampling activities discussed previously, subsurface soil samples (Geoprobe borings) will be collected at the top of the bank along Areas A, B, and C to confirm that the residuals are isolated and to identify subsurface soil conditions that may not be able to support construction equipment. A horizontal and elevation survey will also be performed to facilitate calculation of soil volumes and to provide information needed to refine bank re grading options.
- Prepare a Soil Boring Log for each Geoprobe borehole based on visual observation. The materials encountered will be classified based on the procedures outlined in ASTM D 2488. The logs will document the borehole identification number, the drilling dates and times, names of field personnel, soil descriptions, sample depths, and recovery. As may be appropriate, photographs of the materials encountered or other pertinent observations will be documented. Photographs will be labeled to indicate the subject, location, date, name of photographer, and project identification number. Formal boring logs will not be completed for hand augers and sediment cores, but information will be recorded to include general soil types, the presence of residuals, residual depth, and thickness if present.

Weyerhaeuser Project Memorandum

- The on site geologist or geological engineer will prepare the Soil Boring Logs in the field. The logs will be reviewed by the senior engineer in the office. A field notebook will also be maintained by the on-site geologist or geological engineer to document other pertinent field information. The senior engineer will review the field notebook for clarity and completeness in meeting the investigation objectives.
- Abandon the Geoprobe boreholes by filling them with bentonite grout following completion of the borehole logs.
- Drilling, hand auger, and sediment coring equipment will be decontaminated if residuals are encountered during the course of work. Decontamination will occur between successive borings. Otherwise, the drilling equipment will be decontaminated following completion of the work.
- Geoprobe® samples will be containerized on site in a 55 gallon drum that will be properly labeled and stored near the former wastewater treatment buildings. Hand auger and sediment coring samples will be placed back into the sample hole to the extent practical. Otherwise, they will also be containerized in the on site drum. It is anticipated that the drum will be removed from the site during the Emergency Response addressing residuals on the banks.
- Survey the locations and ground surface elevations of the Geoprobe boreholes following completion. The accuracy of the survey will be ± 0.01 foot for the horizontal coordinates and ± 0.1 foot for the vertical elevation. The survey locations will be added to the boring logs. Additional survey points will be completed in the Kalamazoo River near Area A to confirm the bank toe. In addition, hand auger and sediment cores that indicate the presence of residuals will also be surveyed to determine if there is a correlation between presence of residuals and elevation relative to the former impoundment.

Decontamination Procedures

Sampling equipment will be rinsed with clean water between sampling locations. As appropriate, temporary decontamination stations will be located near the areas being sampled. These temporary areas will consist of plastic sheeting placed on the ground surface, a series of 5 gallon wash and rinse buckets, appropriate brushes and paper toweling for extra drying if needed. City or purchased potable water will be used for decontamination. The following general steps will be used in the decon process:

- Loose material will be brushed off into a 5 gallon solid waste bucket.
- Hand auger will be scrubbed with potable water in a 5 gallon liquid wash bucket.
- Hand auger will be rinsed twice with clean potable water in 5 gallon liquid rinse buckets.
- Hand auger will be dried as needed with paper towels.

As the wash water becomes non-useable, it will be transferred into a 55 gallon drum designated for decon water. Decontamination water and investigation derived solid wastes will be stored on site in 55 gallon drums at the former wastewater treatment plant area prior to characterization and off site disposal.

Weyerhaeuser Project Memorandum

Table 1
Geotechnical Investigation Data Quality Objectives
Question Summary

Major Steps	Questions to Consider	Site Information
Step 1 State the Problem	<i>Identify the members of the planning team and the primary decision maker</i>	The members of the planning team will include the Weyerhaeuser Project Manager RMT project team and drilling contractor. The primary decision maker is the Weyerhaeuser Project Manager in consultation with the USEPA RPM.
	<i>Develop a concise description of the problems</i>	In 2001 and 2003 investigations of the Plainwell Bank confirmed PCB concentrations >4 mg/kg associated with the presence of residuals. However, no detailed information is available regarding the quantity or extent.
	<i>Specify available resources and relevant deadlines for the study</i>	Available information includes historical data for river banks and hydrologic studies prepared by various agencies. Additional information is needed as soon as possible to coordinate with the planned Time Critical Removal Action on the Former Plainwell Impoundment (TCRA).
Step 2 Identify the Decisions	<i>Identify the principal study questions</i>	Where along the bank of the Plainwell Mill bank are residuals located, how much material is present (depth, width, and horizontal extent).
	<i>Define alternative actions</i>	Since historic sample locations are uncertain, residuals may not be observed in the first sampling location. Therefore, additional hand augers will be advanced to confirm these observations. The quantity and location of residuals targeted for excavation will be identified in the Emergency Action Design Report, as determined by the results of this investigation.
	<i>Develop decision statement</i>	Once residuals are located through hand augers, additional locations hand augers will be used to define size and observe soil characteristics. GIS measurements and elevation survey data will locate the deposits for evaluation of their proximity to the Kalamazoo River. The targeted excavation areas and any other management approaches for residuals will be described in the Emergency Action Design Report.

Weyerhaeuser Project Memorandum

Major Steps	Questions to Consider	Site Information
Step 3 Identify Inputs to the Decision	<i>Identify the information that will be required to resolve the decision statement</i>	Hand augers will be advanced at a number of locations where residuals are suspected Geoprobe borings will be advanced in upland areas to determine if residuals extend within the current banks
	<i>Determine the sources for each item of the information identified.</i>	The 2001 and 2003 data provided basic description of residual locations
	<i>Identify the information that is needed to establish the action level</i>	Visual identification of residuals along the Plainwell Mill bank and classification of bank soil types
	<i>Confirm that appropriate measurement methods exist to provide the necessary data</i>	Hand augers sediment cores, and Geoprobe borings with visual classification will be consistent with data needs
Step 4 Define the Boundaries of the Study	<i>Specify the characteristics that define the population of interest</i>	Soil types, texture grain size color, and other observable characteristics
	<i>Define the spatial boundary of the decision statement</i>	Entire length of the banks along the Plainwell Mill property Samples will be collected at individual locations and results extrapolated to define quantity and distribution of residuals thus supporting decision making
	<i>Define the temporal boundary of the decision statement</i>	Design information is needed immediately to support construction in 2007 Input and site actions will be completed when dam reconstruction and Kalamazoo River re routing is finished (targeted for 2008)
	<i>Define the scale of decision making</i>	Location of the residuals provides information needed to assess bank conditions and provide input into the Emergency Action design
	<i>Identify practical constraints on data collection</i>	Practical constraints could include the access challenges on specific slopes, the presence of underground or overhead utility lines, debris piles, coarse fill material trees and shrubs and adverse weather
Step 5 Specify Tolerable Limits on Decision Errors	<i>Determine the possible range of the parameter of interest</i>	Soil types identified in bank or soils consistent with past descriptions identified as residuals
	<i>Identify the decision errors, and choose the null hypothesis</i>	The baseline condition (null hypothesis) is that the residuals are present along the bank and present an imminent threat to human health or the environment.

Weyerhaeuser Project Memorandum

Major Steps	Questions to Consider	Site Information
	<i>Specify the range of possible values of the parameters of interest where the consequences of decision errors are relatively minor</i>	Soil conditions in localized areas are not accurately defined. Uncertainty could be addressed through analytical tests of samples if multiple nearby samples do not provide sufficient information.
	<i>Assign probability values to points above and below the action level that reflect the tolerable probability for the occurrence of decision errors</i>	It is very unlikely that 30 to 40 hand augers samples to 3 feet below grade will all result in misidentification of soil conditions after review by field geologists and checking of bagged samples by senior engineers.
Step 6 Optimize the Plan	<i>Review the DQO outputs and existing environmental data.</i>	Visual information from multiple soil samples will be combined with location information to assess the presence and quantity of residuals.
	<i>Develop the general data collection design</i>	Data design is based upon multiple hand augers along the Plainwell Mill bank at approximately 100 foot intervals. Hand augers are expected to extend to the depths of 1 to 3 feet or to refusal. Hand auger results will be supplemented by Geoprobe borings and selected sediment cores in locations where residuals were identified in the hand auger samples.

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Table 2
Proposed Sampling Locations Near Areas A, B and C

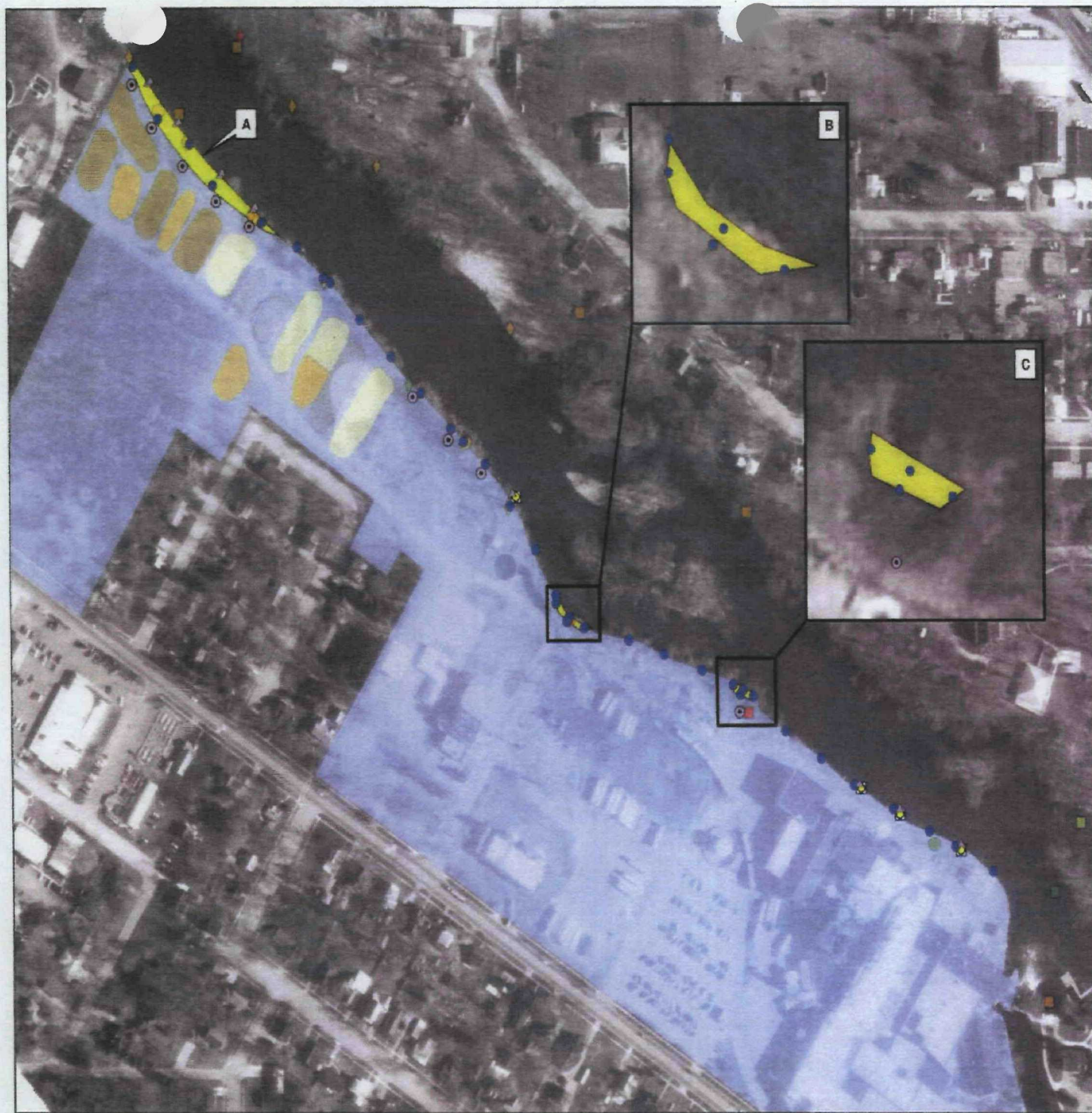
Sample Type	Sample Collection Approach	Observations	Sampling Objective	Locations
Surface soils to ~2 to 3 feet below ground surface (bgs)	● Advance hand augers	Presence depth, thickness and horizontal extent of residuals	Visually verify the presence depth thickness and horizontal extent of residuals and document other conditions that may impact Emergency Response	<p><u>Area A</u></p> <p>Sample at perimeter and center to confirm presence and depth of residuals</p> <p>Assume 5 to 8 locations</p>
				<p><u>Areas B and C</u></p> <p>Sample at documented locations through depth of residuals then offset approximately 20 feet horizontally in northeast and southwest directions.</p> <p>Assume a total of 6 to 10 locations</p>
				<p><u>Other Areas</u> Between Areas A and B</p> <p>1 Confirm presence of residuals at four historic sampling locations</p> <p>2. Sample at approximately 100 foot centers (8 locations) (Locations may change based on visual observations during field activities</p> <p>3 Assume up to eight additional borings to confirm extent if residuals are identified</p>
				<p><u>Other Areas</u> Remainder Portion of Mill Property Between Areas B and C and Along Mill Buildings</p> <p>Sample at approximately 100 feet centers along remaining portion of property</p> <p>Assume up to 5 to 8 locations</p>

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Sample Type	Sample Collection Approach	Observations	Sampling Objective	Locations
Surface sediments to depth of 6 to 12 inches bgs	⚠ Advance hand augers or piston core	Visual observations of grain size material type or residuals	Identify presence of soft sediments or residuals at edge of river channel or confirm non-depositional environment in river (i.e., sandy sediment or gravel)	Four sediment samples will be collected near Area A with additional sediment samples collected near Areas B and C if needed depending upon the confirmation of local residuals
			Identify presence of soft sediments or residuals within river channel near previously identified outfall locations	<u>Other Areas</u> Previously Identified Outfall Locations (near bank) Assume 4 hand augers
Subsurface soil conditions behind in river bank to depth of 10 to 15 feet bgs	⊕ Extend Geoprobe samples to depths below the floodplain elevation	Soil types along upper banks Presence of residuals or other materials (e.g. debris) behind the floodplain areas	Identify whether residuals exist under banks to help determine approach.	<u>Areas A, B, and C</u> Assume up to 6 to 8 Geoprobe borings to 10 to 15 feet bgs and 3 borings between Areas B and C. Final locations and number of probes will depend upon actual residual identification
Subsurface soils in upland areas behind additional floodplain where residuals were identified	⊕ Extend Geoprobos through upland soils adjacent to floodplains Extend Geoprobe samples to floodplain depths	Determine presence of residuals behind the floodplain.	Assess soil conditions to support bank reshaping options and additional excavation/action areas	<u>Other Areas</u> Extend Geoprobos to depths of adjacent land surface (~ 5 to 8 feet above grade) Extend Geoprobos to ~10 to 15 feet bgs Assume up to 8 Geoprobe locations. Final location and number of probes will depend upon actual residual identification

Notes

- 1 All sample locations to be located with GPS and standard survey techniques.
- 2 Sample collection approach may change depending upon site conditions
- 3 Sample locations are approximate. Actual locations may change based on field observations



LEGEND - Total PCBs (mg/kg)

Removal Assessment Report (Weston, 2002)

- 0.0 - 1.0
- 1.0 - 4.0
- 4.0 - 50.0
- >50

Former Plainwell Impoundment River Bank (BBL, 2003)

- 0.0 - 1.0
- 1.0 - 4.0
- 4.0 - 50.0
- >50

Plainwell Paper Gray Seam Investigation (GDM, 2001)

- 0.0 - 1.0
- 1.0 - 4.0
- 4.0 - 50.0
- >50

PROPOSED SAMPLING LOCATIONS (JULY 2007)

- ⊙ GEOPROBE LOCATION (SOIL)
- △ HAND AUGER OR CORE LOCATION (SEDIMENT)
- HAND AUGER LOCATIONS (SOIL)
- OUTFALL LOCATION

NOTES

1. If samples collected at multiple depths, the maximum concentration is presented.
2. Up to 8 additional hand augers may be advanced between Areas A & B to define the extent of residuals.
3. Preliminary sample locations may change in the field depending upon site observations or field conditions.

0 200 400
Feet

1 inch equals 200 feet



PROJECT:

WEYERHAEUSER COMPANY
KALAMAZOO RIVER SUPERFUND SITE

SHEET TITLE:

PRELIMINARY HAND AUGER AND GEOPROBE LOCATIONS
PLAINWELL MILL PROPERTY AND RIVERBANK

DRAWN BY: WEBER M

SCALE:

AS NOTED

PROJ. NO.:

00-05116.0

CHECKED BY:

FILE NO.:

51160804.mxd

APPROVED BY:

DATE PRINTED:

FIGURE 1

DATE:

JULY 2007

7/5/2007



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Appendix B

Plainwell Mill Bank

Reconnaissance and Investigation



Plainwell Mill Banks Emergency Action

Appendix B Plainwell Mill Bank Reconnaissance and Investigation

Subject	Determining the Extent of Residuals Along the Plainwell Mill Banks
Objectives	<p>The objectives of the Plainwell Mill Bank reconnaissance activities were</p> <ol style="list-style-type: none">1 To estimate the extent and refine the quantity of residuals in three previously identified floodplain areas2 To confirm bank characteristics, subsurface soils and sediment types adjacent to floodplain areas3 To verify the presence and quantity of gray residuals with reported elevated polychlorinated biphenyls (PCB) concentrations (> 4 ppm) at bank locations along the Plainwell Mill property4 To collect bank soil samples near outfall locations when possible to evaluate the presence/absence of residuals5 To identify conditions along the bank that would impact residuals removal bank reshaping, or the interface of the banks with future land use
Approach	<ul style="list-style-type: none">■ Perform a visual reconnaissance of the entire bank adjacent to the Plainwell Mill property to identify potential obstacles to removal activities including debris rubble rock and historic outfalls■ Confirm extent and depth of residuals in floodplain areas In addition place hand augers between these areas along the bank to evaluate the presence of residuals■ Place sediment probes or hand augers along the bank near floodplain Area A1 to determine if soft sediments or residuals exist along the bank in the near shore sediment■ Advance sediment probes or hand augers near current and former outfall locations to identify the presence of residuals or soft sediment■ Place Geoprobe borings along top of bank to verify residuals do not extend into the bank and evaluate the ability to reuse specific soil piles onsite for fill■ Survey hand auger and Geoprobe boring locations to determine if a relationship exists between the presence of residuals and elevation
Outcome	<p>Reconnaissance involved 39 hand augers 10 sediment samples, and 12 Geoprobe borings advanced along the 2,600 linear feet of Plainwell Mill property banks Visual residual deposits were identified at varying depths, widths and thicknesses along four zones that were defined for use in the Emergency Action excavation activities Some residuals are present under eroded soil up to a thickness of 1 foot and in discontinuous locations along the banks The residuals also vary in thickness from several inches to 2 feet and most are likely saturated with water The 12 Geoprobe borings advanced near top of bank established that on site residuals do not extend into the banks, thus confirming that the bank residuals are river deposits The estimated volumes of residuals targeted for excavation range from 3,820 to 5,000 cubic yards with the majority of these residuals present along floodplains near the western end of the Plainwell Mill property A total of ten outfalls were also identified during the most recent site reconnaissance Residuals were only present from 0.2 to 0.6 feet below the sand and gravel sediment surface at one location immediately west of floodplain Area C1 located in Zone C</p>

Plainwell Mill Banks Emergency Action

Background and Objectives

Previous investigations conducted by CDM (2001) Weston (2002) and others have identified visible residuals in several low lying floodplain areas along the banks of the Plainwell Mill (see Figure B 1). Analytical results and the associated sample boring logs indicate that samples containing greater than 4 ppm polychlorinated biphenyls (PCBs) concentrations typically also contain visible paper residuals. Thus, the presence of gray residuals can be used as an indicator of potential contamination. The purpose of this bank investigation is to visually define the horizontal and vertical extent of residuals along the Plainwell Mill banks of the Kalamazoo River. Specific objectives of the Plainwell Mill Bank Reconnaissance and Investigation include the following:

- To establish extent of residuals in previously identified floodplain areas of concern (identified here as A1, C1 and C2 as shown on Figure B 1)
- To evaluate the presence and quantity of residuals along the bank for the entire mill property
- To identify conditions along the bank and near outfalls that would impact residuals excavation, bank reshaping, or the interface of the banks with future land use

For the purposes of this Emergency Action, the Mill banks have been divided into four different zones based upon the river velocity and bank characteristics information from this and prior investigations. Within these zones existing floodplain areas are described as areas and designated using the zone letter and a number to denote their general location. For example, Area A1 is in Zone A and is the first floodplain area moving from west to east within this zone. The zone and subarea designations are used throughout the remainder of this memorandum and in the associated Emergency Action Design Report. Table B 1 summarizes the designated zones and applicable physical features.

Table B-1
Summary of Plainwell Mill Banks Emergency Action Designated Zones

Zone	Sampling Location	Est. Length (feet)	Bank and River Velocity Characteristics
A	HA 1 to 7	600	Definable floodplain areas, wooded and higher banks, vegetation into river, lower river velocities
B	HA 7 to 17	700	Steep and heavily wooded banks, no observable floodplain areas and moderate water velocity
C	HA 17 to 29	650	Steep banks with large trees present, limited floodplain, area of highest water velocity
D	HA 29 to 35	650	Lower banks, mainly grass and small bushes, moderate river velocity

Investigation and Assessment

Reconnaissance of Bank and Hand Augers

Walking along the bank was relatively unimpeded due to the low water conditions. The flow rate during the site visit the week of July 16, 2007 was approximately 480 cfs compared with a flow rate of ~1,400 cfs during an earlier site visit in March 2007. The lower flow rate allowed investigators wearing waders to enter the water and view the exposed bank from the river. Due to the steep banks along the majority of the Plainwell Mill, all of the pertinent observations were made while viewing the bank from the water.

Plainwell Mill Banks Emergency Action

A total of 39 hand augers were advanced along the bank of the Plainwell Mill to evaluate the presence of residuals. Hand augers in all zones were advanced to refusal or a saturated depth that usually contained sand and gravel. If residuals were encountered, the hand augers were advanced until residuals were no longer visible or until refusal (typically due to encountering the more compacted sand and gravel layer).

Zone A

This zone is characterized by higher wooded banks, larger floodplain areas, lower flow velocities, and aquatic vegetation extending up to 30 feet from the bank to the edge of the river. Zone A also includes the large floodplain Area A1 that covers an estimated 12,300 square feet.

In Zone A, ten hand augers were located to refine the extent of residuals. The first five hand augers (HA1 to HA5) were placed in the large floodplain area at the western edge of the property (Area A1) to confirm residual thickness and extent compared with historical data in that location. The residuals in this area were generally 1 to 2 feet thick and covered by 0.5 to 1 foot of topsoil. This information generally confirms the results of the investigation performed by CDM in 2001.

The other five hand augers were positioned near the east edge of Zone A, where the floodplain narrowed. Two hand augers (HA6 and HA7) were placed to determine residual thickness closer to the vertical bank, and three hand augers (EXHA1A, EXHA2A, EXHA3A) were placed to determine distance and thickness of the residual deposits toward the bank (away from the water). From these borings, it was determined that the residuals exist parallel to the river and extend variable distances (from 1 to 4 feet) away from the water's edge. The thickness of these deposits also varies. Generally, the deposits are thickest near the water and become thinner as the submerged bottom intersects with the upland bank. This deposition pattern results in wedge-shaped deposits that are thickest closest to the water.

Zone B

The banks in this zone are steep, heavily wooded, and contain occasional concrete debris and rubble near the toe of the slope. The submerged sediment present at the toe of the slope (where bank meets water) is primarily a mix of silt, cobble, and gravel. No floodplain areas exist within Zone B.

Ten hand auger locations were selected to provide an adequate spatial distribution of residuals and to verify the presence of residuals where previous analytical data had indicated PCB concentrations were greater than 4 ppm. The residuals along this reach were occasionally visible at the surface depending upon localized river and bank conditions. Although residuals were not always present at the surface, they were observed beneath a veneer of soil at almost every hand auger location from HA9 to HA17. At the four locations where PCBs were reported to be present at concentrations greater than 4 ppm, the residuals were clearly visible in the hand augers. The thickness of the residuals in this zone ranged from 0 to 1.5 feet thick beneath 0 to 0.5 feet of topsoil. In addition, at a number of locations, the residuals were saturated due to low elevation relative to groundwater or the river water level.

Zone C

This zone is characterized by high flow rates attributed to the small islands which narrow the river in this reach and very steep, heavily wooded banks adjacent to the slight bend in the Kalamazoo River. This zone contains two small floodplain areas denoted Areas C1 and C2. Moving further to the east

Plainwell Mill Banks Emergency Action

between Areas C1 and C2 the bank is less steep but river velocities are still elevated due to the constricted cross section

A total of eleven hand augers were placed in Zone C, including four in each of the small floodplain Areas C1 and C2 (Figure B 1) Residuals were only occasionally visible at the surface along this reach Outside of the floodplain areas, the three hand augers indicated that residuals in this reach were thin averaging 0.1 feet thick beneath approximately 0.2 to 0.5 feet of topsoil The higher river velocities associated with this reach likely reduced the quantity of deposition when the Plainwell Impoundment was at full pool Areas C1 and C2 are floodplain areas similar to Area A1 but each are smaller covering only 800 to 860 square feet The four hand augers in Area C1 indicated that the residuals were present beneath approximately 3 feet of topsoil and ranged from 0 to 1.7 feet thick The residual thickness in Area C2 was ~1.6 feet underneath 0 to 0.8 feet of topsoil

Zone D

Zone D encompasses the banks on the Kalamazoo River side of the former Plainwell Mill buildings The banks in this zone are 3 to 4 feet high and show signs of undercutting and sloughing caused by erosion during high river velocities No floodplain areas exist within this zone

No residuals were visible at the surface along the banks Sediment just offshore was generally silty with an occasional 6 to 12 inch lens of river rock Hand auger samples in this reach were placed along the interface between the river water elevation and the rise of the bank Eight hand augers (HA29 to HA35) were advanced in this zone The residual thickness ranged from 0 to 1.5 feet under approximately 0.5 to 1 feet of silty soil All of the residuals in this reach were saturated

Geoprobe Borings Investigation Extent of Residuals

Geoprobe borings were advanced to determine 1) if the residuals present along the banks/floodplains extended into or underneath the top of bank and 2) the condition of soils that may need to be cutback to maintain a stable slope Twelve Geoprobe borings were advanced to a depth consistent with the current river elevation Residuals were only visible in a shallow sample collected from GP2 (Zone A, Figure B 1) Upon finding potential residuals at GP2 an additional boring was placed at GP2.5 closer to the top of bank and residuals were not encountered through the entire length of the boring When the surveyed borings were mapped using Global Positioning Station (GPS) coordinates after completion of the field work GP2 was mapped at the edge of a former wastewater lagoon which explains the presence of shallower residuals However residuals were not observed at GP2.5 so there is no indication of a connection between the wastewater lagoon and the bank residuals Overall since there were no observed residuals in the remaining locations and the material present within the majority of the borings was general fill, these bank soils are considered suitable for potential re grading along the banks

Survey Results

All Geoprobe and hand auger locations were surveyed to provide additional data needed to calculate residual volumes and to determine if any correlation existed between the presence of residuals and the former Plainwell Impoundment elevation Figure B 2 presents the residual thickness information for those hand augers placed immediately along the bank nearest the Kalamazoo River at the appropriate survey elevation The residual elevations generally correlate with the historic impoundment elevation However there is sufficient variability to conclude that these deposits are more directly related to the bank elevation along the river as well as the local depositional setting

Plainwell Mill Banks Emergency Action

The survey data were compared to an approximated water elevation across the site at the time of sampling to provide input on the water content of residuals that would be targeted for excavation. Since the current river elevation cuts diagonally through the residual deposits, the residuals on the river's edge at the west end of the property are above the current river elevation while those on the east end are often below the current river elevation. These results suggest that the majority of residuals will be saturated or nearly saturated during excavation activities along the Plainwell Mill banks.

Sediment Probes Near Zone A and Outfall Locations

Sediment Probes

Four transects were completed in the near shore sediment of Area A1 to evaluate the presence, thickness, and distance of residuals present in the sediments. Each transect consisted of a sediment probe 0 feet, 5 feet, and 10 feet toward the river from the water's edge. The probe at 0 feet from the shore was ~2 feet below the top of bank and immediately adjacent to the water. For each of the four transects, residuals were generally present at the 0 and 5 foot distances from shore. Residuals were also present at the 10 foot distance at two of the four transects. The thickness of the residuals in the near shore sediment ranged from 0 to 1.3 feet.

Outfall Locations

A total of ten outfalls were identified during the most recent site reconnaissance and are labeled and photographed on Figure B-3. A more detailed discussion of potential water sources to each outfall is included as Appendix C. During the field reconnaissance, either sediment probes or hand augers were advanced near each outfall to determine if residuals were observed adjacent to these outfall locations. Of the ten outfalls, only one outfall (SW 9) located immediately west of floodplain Area C1 (part of Zone C) indicated the presence of residuals in the near shore sediment. At this location, residuals were found 0.2 to 0.6 feet below the sand and gravel sediment surface.

Summary and Conclusions

Previous investigations have located residuals in Zone A near the former wastewater lagoons and intermittently along the Plainwell Mill bank. To gain a greater understanding of the site conditions and extent of residuals, a total of approximately 39 borings were advanced in floodplain Areas A1, C1, and C2 and along the Plainwell Mill bank. Site observations indicated that residuals were clearly visible from the water along Zone A extending to the east approximately 600 feet from the property boundary (HA1 to HA7). Hand augers in Zone A and along the floodplain (Area A1) indicated that residuals were generally 1 to 2 feet thick overlain with 0 to 1 feet of topsoil.

Within Zone B, immediately east of Zone A, residuals were visible to varying degrees and residual thickness was 0 to 1.5 feet thick beneath 0 to 6 inches of topsoil. Within Zone C (HA17 to Area C2) the residual deposits were generally less visible and thinner (0 to 3 inches). The thinner deposits are likely associated with the bend in the river and increased river velocities reducing deposition along this area of the Mill banks.

Zone D contains thicker deposits ranging from 0 to 1.5 feet that were visible in five of the eight borings. The total quantity of residuals (and topsoil) on site is approximately 3,820 to 5,000 cubic yards with 2,600 cubic yards located in Zone A (Table B 2).

Plainwell Mill Banks Emergency Action

Table B-2
Residual Thickness and Volume⁽¹⁾

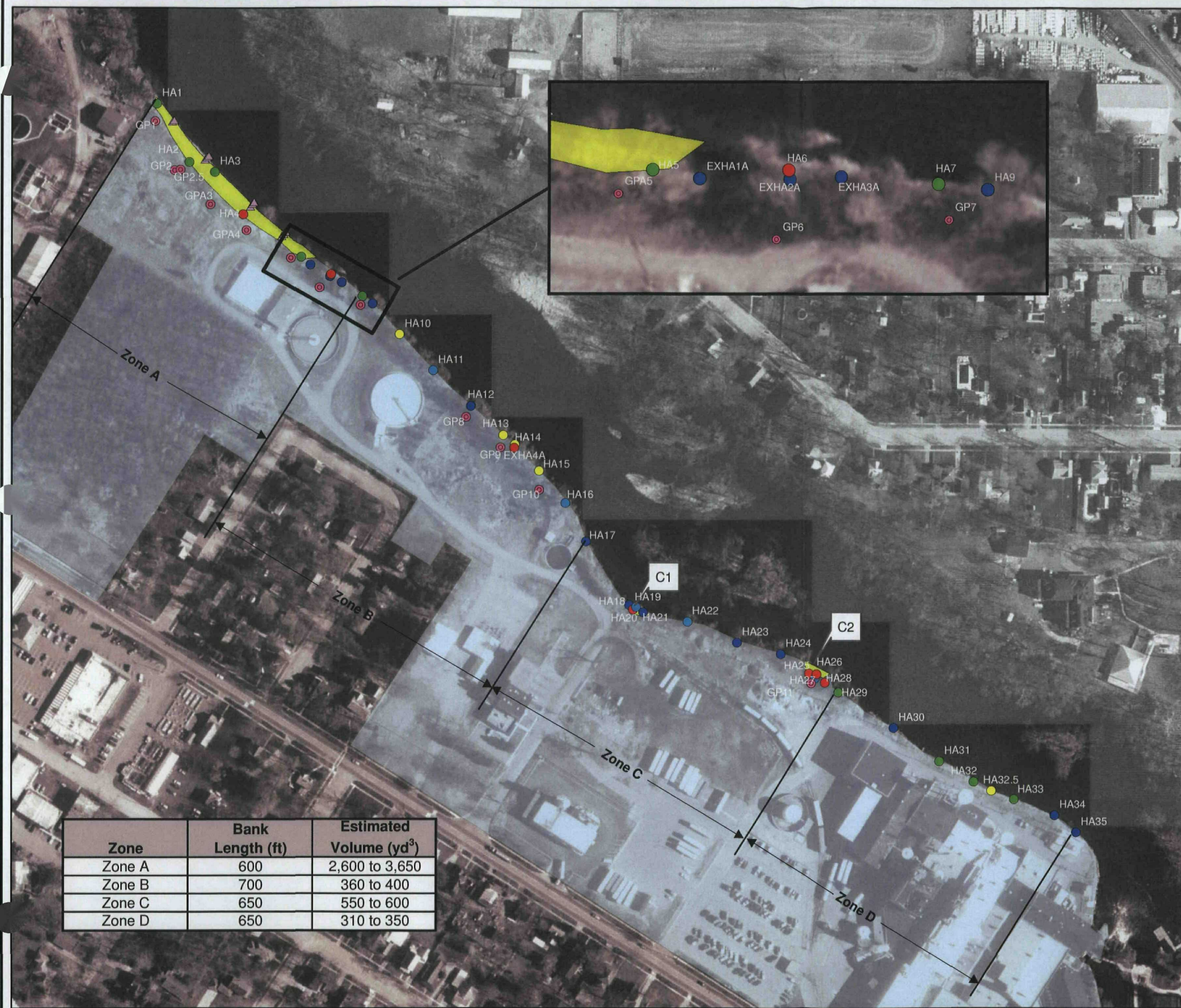
Group		Hand Augers ⁽²⁻⁴⁾	Length/Area	Units	n	Residual Thickness (ft)			Approximate Volume (yd ³)
						Min.	Mean	Max.	
Floodplain Areas	Area A1	HA 1 to 5	12,300	ft ²	5	0.6	1.0 ⁽¹⁾	1.6	2,300
	Area C1	HA 18 to 21	860	ft ²	4	0.0	0.5	1.7	220
	Area C2	HA 25 to 28	800	ft ²	4	0.2	1.6	2.0	140
Zone Totals	Zone A	HA 1 to 7	600	ft	7 ⁽³⁾	0.6	1.0 ⁽¹⁾	1.8	2,600 ⁽⁵⁾
	Zone B	HA 7 to 17	700	ft	9 ⁽⁴⁾	0.0	0.7	1.5	360
	Zone C	HA 17 to 29	650	ft	11	0.0	0.8	1.6	550 ⁽⁵⁾
	Zone D	HA 29 to 35	650	ft	8	0.0	0.6	1.5	310

Notes:

1. This investigation was based upon visual assessment of residuals and focused near the river's edge.
2. Numbering of hand auger locations is not sequential.
3. Three additional hand augers were placed in Zone A to refine extent (not included in table).
4. One additional hand auger was placed in Zone B to refine extent (not included in table).
5. Approximate Volumes are inclusive of the sample number and volumes from Areas A1, C1, and C2.

Survey measurements of hand auger locations indicate that the residuals exist primarily within the former impoundment elevation of 712 Mean Sea Level, +/- 1 foot (Figure B-2) with residuals at slightly higher elevations near the east end of the facility sloping downward to the west, with some correspondence with the present river gradient. Twelve Geoprobe borings were advanced near top of bank to determine if residuals extended underneath the bank; none of the borings found residuals that would coincide with residuals extending into the bank from the floodplain.

Residuals were identified at one of the ten outfall locations observed during the site reconnaissance. A separate outfall management approach will be included in the Design Report for the Plainwell Banks Emergency Action.



LEGEND

Hand Auger Locations- Residual Thickness (ft)

- 0.0 - 0.1
- 0.2 - 0.5
- 0.6 - 1.0
- 1.1 - 1.5
- 1.6 - 2.0
- ⊙ GeoProbe Locations (Soil)
- ▲ Sediment Locations (SedimentI)

NOTES


1. Conditions as observed the week of 7/16/07

0 200 400
Feet

1 inch equals 200 feet



Zone	Bank Length (ft)	Estimated Volume (yd ³)
Zone A	600	2,600 to 3,650
Zone B	700	360 to 400
Zone C	650	550 to 600
Zone D	650	310 to 350

PROJECT: WEYERHAEUSER COMPANY KALAMAZOO RIVER SUPERFUND SITE		
SHEET TITLE: HAND AUGER AND GEOPROBE LOCATIONS PLAINWELL MILL PROPERTY AND RIVERBANK		
DRAWN BY: WEBER N	SCALE: AS NOTED	PROJ. NO.: 00-05116.02
CHECKED BY:	DATE PRINTED: 1/11/2008	FILE NO.: 51160210
APPROVED BY:	DATE: JANUARY 2008	FIGURE B-1
		
150 N. Patrick Blvd., Suite 180 Brookfield, WI 53045-5854 Phone: 262-879-1212 Fax: 262-879-1220		

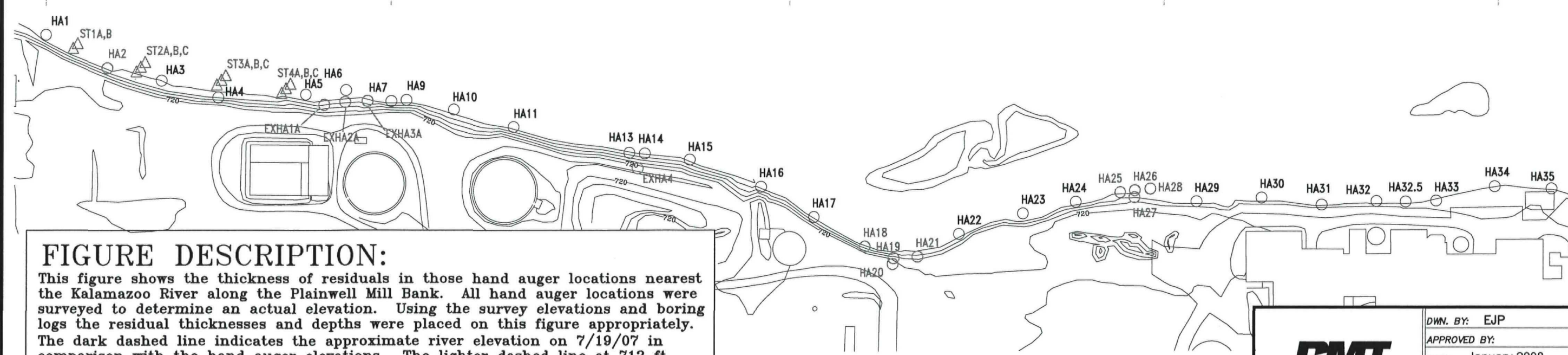
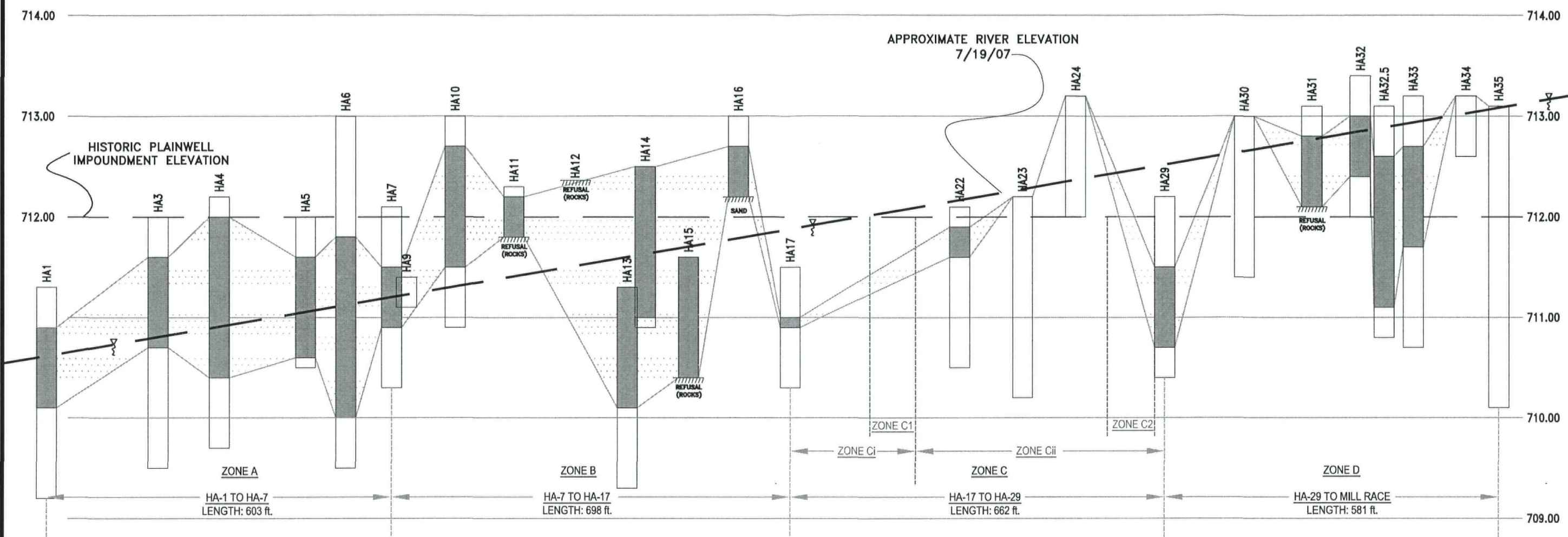


FIGURE DESCRIPTION:

This figure shows the thickness of residuals in those hand auger locations nearest the Kalamazoo River along the Plainwell Mill Bank. All hand auger locations were surveyed to determine an actual elevation. Using the survey elevations and boring logs the residual thicknesses and depths were placed on this figure appropriately. The dark dashed line indicates the approximate river elevation on 7/19/07 in comparison with the hand auger elevations. The lighter dashed line at 712 ft indicates the historic Plainwell Impoundment elevation



DWN. BY:	EJP
APPROVED BY:	
DATE:	January 2008
PROJ. #	5130.02
FILE #	51300204.DWG

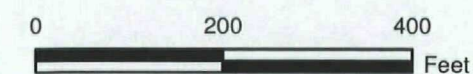


LEGEND

- STORM WATER OUTFALL
- PROCESS WATER OUTFALL
- PROCESS OUTFALL 005 - APPROX. LOCATION
- FORMER PRIMARY CLARIFIER - APPROX. LOCATION

NOTES

1. LOCATIONS ARE BASED ON HISTORICAL PERMIT FILES, ENGINEERING DRAWINGS, AND RMT'S SITE OBSERVATIONS.
2. STORM SEWER AND PROCESS OUTFALL PHOTOGRAPHS WERE TAKEN BY RMT DURING A FIELD VISIT THE WEEK OF 7/16/07.



1 inch equals 200 feet



PROJECT: WEYERHAEUSER COMPANY
PLAINWELL MILL BANKS EMERGENCY ACTION

SHEET TITLE:
STORM WATER AND PROCESS WATER OUTFALLS

DRAWN BY: PYLKASE	SCALE: AS NOTED	PROJ. NO.: 00-05130.02
CHECKED BY:	DATE PRINTED: 1/11/2008	FILE NO.: 51300202
APPROVED BY:		FIGURE B-3
DATE: JANUARY 2008		



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Appendix C

Outfall Location and Management Plan

**Appendix C
Outfall Location and Management Plan**

Subject	Plainwell Banks Emergency Action Outfall Management Plan for Storm Water and Process Water Outfalls on the Plainwell Mill Property along the Kalamazoo River
Objectives	<ol style="list-style-type: none">1 To identify outfalls and determine which have no active storm water discharge and no likely future use so that those outfalls may be considered for abandonment as part of the Emergency Action activities2 To mark the locations of formerly abandoned outfalls and exercise caution when working in their vicinity3 To protect and leave in place those outfalls that are determined to have active storm water discharges likely future uses, or uncertain origin at this time
Approach	<ul style="list-style-type: none">■ Conduct file reviews in order to identify historical uses of the outfalls■ Perform phased site reconnaissance visits to locate and assess the current status of the outfalls■ Establish an outfall screening process using simple in field procedures after the site is cleared to help identify or confirm the past or current use of observed outfalls that are unknown or have uncertain origin■ Develop a decision process using updated outfall characteristics to establish an outfall management approach for each outfall location
Preliminary Outcome	On a preliminary basis outfalls that are expected to be abandoned during the Emergency Action activities include 1) the small unidentified pipe located to the north of the former mill buildings, and 2) the discharge pipe located north of the former aeration basin Other outfalls will be designated for abandonment or preservation after clearing performed during site preparation for the Emergency Action provides an opportunity for unobstructed observations

Introduction and Objectives

There are multiple active and inactive outfalls located on the former Plainwell Mill property that need to be considered during construction activities for the Emergency Action excavation along Plainwell Mill banks adjacent to the Kalamazoo River (the northern boundary of the Mill site) This appendix has been prepared to summarize the current information on outfalls present along the Kalamazoo River describe the outfall screening process that will be performed during site preparation activities and identify an outfall management plan for each outfall based upon the historic and/or current use

The objectives of the outfall identification and management activities are

- To determine which outfalls have no active storm water discharge and no likely future use so that they may be considered for abandonment, as part of the Emergency Action activities
- To protect and leave in place those existing outfalls that are determined to have active storm water discharges, likely future uses or have uncertain origin
- To mark the locations of any known or newly abandoned outfalls so that additional caution may be used when working in their vicinity

Plainwell Mill Banks Emergency Action

Outfall Summary

The outfalls associated with the former Plainwell Mill site were identified through a combination of historic research and direct observation. The compiled list of outfalls based upon historic research included those along the Mill race as well as the Kalamazoo River. The site observations were focused upon the outfalls along the Kalamazoo River in support of the Emergency Action.

During site visits on July 16, 2007, and August 21, 2007, RMT observed and photographed thirteen outfalls along the Kalamazoo River and recorded the locations of the outfalls using a handheld Global Positioning System (GPS) unit (see Figure C 1). RMT then cross referenced the observed outfalls with historical permit and engineering files for the Mill, as summarized in Table C 1. The historic information and confirming observations suggest that seven of the thirteen outfalls are storm water outfalls, and at least three of these outfalls are active (i.e., SW 8, SW 9 City Michigan Avenue) and will need to be preserved during the Emergency Action. The other storm water outfalls will be further assessed and will be preserved during the Emergency Action if they are found to be active. In contrast, five of the thirteen outfalls appear to be associated with historic process discharges and may no longer be needed for present or future site uses. One of these former process outfalls is known to have been previously abandoned (i.e., Process Outfall 004). The remaining historic process outfalls with no storm water component will be considered for abandonment during the Emergency Action. The final observed outfall was an unidentified pipe located north of the mill buildings. This pipe will be assessed to determine if it carries storm water flow. If not, it will also be considered for abandonment during the Emergency Action. These findings will be confirmed once the trees, bushes, and other vegetation are cleared from the bank areas and visual assessments and connection testing, as needed, can be conducted to confirm the historic information.

In addition to the thirteen outfalls that were observed by RMT, the permit and engineering files indicate that two additional outfalls were historically located along the Kalamazoo River but have presumably been abandoned. These outfalls are summarized in Table C 2. The former locations of these outfalls will be marked prior to initiating the Emergency Action and work in these areas will proceed cautiously so as not to disturb abandoned piping, if present.

In-Field Outfall Screening Process

The general approach for evaluating and addressing the existing outfalls at the Plainwell Mill is summarized on Figure C 2. For each existing outfall, the evaluation process will begin with confirming the presence of the outfall followed by an evaluation of its historic or current use based upon location, existing descriptions, and observations. The screening steps outlined in Figure C 2 are described in more detail as follows:

1. After observation of an outfall, determine if it has already been identified based upon the historic review (summarized in Table C 1 and Figure C 1).

Plainwell Mill Banks Emergency Action

- 2 If the outfall has been identified and its use is determined proceed to the Outfall Management Decision Matrix (Table C 3)
- 3 If an active storm water outfall does have a former process water connection further evaluation will be performed as needed during the Remedial Investigation activities to be conducted at a later date
- 4 If the outfall has not been identified or its use is unknown or unclear complete the following steps
 - Locate nearby storm sewer inlets that could be interconnected to the outfall and introduce clean city water into the storm inlet while observing flow at the outfall
 - If a location to introduce water is unavailable or too far from the outfall for limited water usage attempt a smoke test using commercial smoke test equipment typically applied to trace illegal storm water connections
 - If water or smoke test inlets are not available or do not confirm the connectivity of an outfall the outfall is classified as unknown and will be maintained during the Emergency Action Additional assessment of unknown outfall will be addressed during the Remedial Investigation activities

Preliminary Abandonment Plan during Emergency Action Activities

The basic approach to Plainwell Banks Emergency Action outfall management is presented as a matrix in Table C-3

Table C-3
Outfall Types and Management Approach

Outfall Type	Management Approach
Storm water	Maintain Outfall
Former Process Outfall with No Storm water	Considering Abandoning Outfall
Fire Protection Testing	Maintain Outfall
Unknown Source	Maintain Outfall

Essentially all outfalls that contain confirmed or suspected storm water flow or those outfalls with unknown sources or connectivity will be retained during construction Based upon current information those outfalls that are not identified as being active storm water outfalls or as being needed for another purpose will be considered for abandonment during the Emergency Action activities Based on an initial assessment, two outfalls are likely to be abandoned (see Figure C 1)

- **Unknown** – The small unidentified pipe located to the north of the former mill buildings
- **Former Aeration Basin** – Discharge pipe located north of the former aeration basin

Additional outfalls or other structures (manholes catchments) may be abandoned during the Emergency Action or Mill RI/FS activities depending on the results of the on site screening process Abandonment methods will depend on the outfall or structure involved In general above grade accessible piping will be removed Below grade piping will either be removed, if easily accessible, or more likely will be left in place The outfall will be plugged with concrete or other low permeability, pumpable material at the

Plainwell Mill Banks Emergency Action

river side and if the other end of the outfall piping has been identified it will also be plugged with concrete or similar media

In general paper residuals or sediment (if present) will be removed from the abandoned outfalls to the extent necessary to perform the abandonment, and these residuals or removed sediment will be segregated from other material and disposed in accordance with applicable state and federal regulations Any sediment that may be contained within piping that does not need to be removed as part of the abandonment will be left in place

References

RMT Inc 2006 Draft Remedial Investigation/Feasibility Study Work Plan Plainwell Mill
Plainwell Michigan Prepared by RMT Inc on behalf of Weyerhaeuser Company September
2006

Table C-1
Summary of Existing Observed Outfalls on the Kalamazoo River and Outfall Management Approach
Plainwell Mill, Plainwell, Michigan

Outfall Number	Status	Location	Source(s) of Flow	Management Approach (Fall 2007)
1 SW 4 (storm water)	To be determined	Just northwest of Mill race	Similar location as former Process Outfall No 001 which had following sources (1950) No normal waste flow (1968) Non contact cooling water (1973) Storm water (1975 to 2000) Unknown	Determine if the outfall is an active storm water outfall or if it is needed for another purpose If so maintain the outfall and protect when working in the area
2 SW 5 (storm water)	To be determined	North side of Mill building	Similar location as former Process Outfall No 002 which had following sources (1950) Waste from the finishing room during clean up periods (1968, 1973) Non contact cooling water (1975 1976) Non contact cooling water floor and roof drainage The manhole located prior to this outfall was described as being the representative storm water catchment area for the Mill and having historically handled process water (BBL 1996a) A 90-foot length of sewer which led to the manhole was flushed in 1997 yielding eleven 55 gallon drums of PCB impacted sediment	Determine if the outfall is an active storm water outfall or if it is needed for another purpose If so maintain the outfall and protect when working in the area
3 SW 6 (storm water)	To be determined	North side of Mill building	Similar location as former Process Outfall No 003 which had following sources (1950) Part of waste from No 3 and No 4 paper machines and from No 2 paper machine after passing through save all some city storm water (1968) Non contact cooling water (1973) Clear water from boiler house (1975 1976) Non-contact cooling water floor and roof drainage	Determine if the outfall is an active storm water outfall or if it is needed for another purpose If so maintain the outfall and protect when working in the area
4 SW 7 (storm water)	To be determined	North side of Mill building	To be determined	Determine if the outfall is an active storm water outfall or if it is needed for another purpose If so maintain the outfall and protect when working in the area

Table C-1
Summary of Existing Observed Outfalls on the Kalamazoo River and Outfall Management Approach
Plainwell Mill, Plainwell, Michigan

Outfall Number	Status	Location	Source(s) of Flow	Management Approach (Fall 2007)
5 SW 8 (storm water)	Active	Scott Street North of former coal pile storage area and No 6 fuel oil tank	Storm water from several manholes in the parking lot and the northcentral portion of the site	Active outfall – protect when working in the area
6 SW 9 (storm water)	Active	Cedar Street North of former Quality Products	Storm water from several manholes in the vicinity of the former Quality Products and Specialty Minerals buildings and one manhole near the former coal pile storage area on the northcentral portion of the site	Active outfall – protect when working in the area
7 City – Michigan Avenue (storm water)	Active	Michigan Avenue Between new primary and secondary clarifiers	Storm water from several manholes along Allegan Street, Michigan Avenue and Short Street	Active outfall – protect when working in the area.
8 Outfall 004 (process water)	Abandoned (1995)	North side of Mill building	(1950) All deinking wastes and some wastes from paper machines No 3 and No 4 (1968) Former emergency overflow from wastewater sump pit (1973) Non-contact cooling water (1975 1976) Non-contact cooling water boiler drainage and floor drainage (1979) Non-contact cooling water compressor cooling water and floor drainage (1994 1996) Approx 0 15 cubic yards of PCB-containing sediment were removed in late 1995 (BBL 1996b) Both ends of the pipe were plugged with cement	Avoid disturbing concrete which was used to abandon the outfall
9 Outfall 005 (Pre 1982) (process water)	To be determined	North of former secondary clarifier	(1967 to 1982) Treated process water from wastewater treatment plant	Protect outfall when working in the area, since storm water that accumulated in the clarifier must discharge to the river
10 Outfall 005 (Post 1982) (process water)	To be determined	North of former secondary clarifier	(1982 to 2000) Treated process water from wastewater treatment plant	Protect outfall when working in the area, since storm water that accumulated in the clarifier must discharge to the river

Table C 1
Summary of Existing Observed Outfalls on the Kalamazoo River and Outfall Management Approach
Plainwell Mill, Plainwell, Michigan

Outfall Number	Status	Location	Source(s) of Flow	Management Approach (Fall 2007)
11 Outfall 007 (process water)	Existing	North side of Mill building	(2000) Non-contaminated discharge for fire protection testing from fire protection water well No 1	Determine if the outfall is needed for fire protection testing or another purpose If not, consider abandonment
12. Aeration Basin	To be determined	North of former aeration basin	(Pre-1982) Potential connection to former aeration basin	Determine if the outfall is an active storm water outfall or if it is needed for another purpose If not, abandon the outfall
13 Unidentified Pipe	To be determined	North of side of the Mill building	Not determined	Determine if the outfall is an active storm water outfall or if it is needed for another purpose If not, abandon the outfall

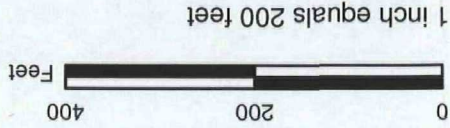
Table C 2
Summary of Additional Historical Outfalls
Plainwell Mill, Plainwell, Michigan

Outfall Number	Status	Location	Source(s) of Flow	Management Approach (Fall 2007)
1 Process Outfall 005 (1950)	Abandoned	North side of mill building (24 inch tile with weir located directly north of new fire supply tower)	(1950) Washer water from the bleached sulfite pulp washer	Mark the former location of the outfall and use caution when working in the area
2 Former Primary Clarifier (1954 to 1967)	Abandoned	North side of mill building	(1954 to 1967) Wastewater was treated in a primary clarifier adjacent to the mill building then discharged to the river The primary clarifier was removed in 1980s and the mill building was expanded over the area in 1995 (Building 1A)	Mark the former location of the outfall and use caution when working in the area



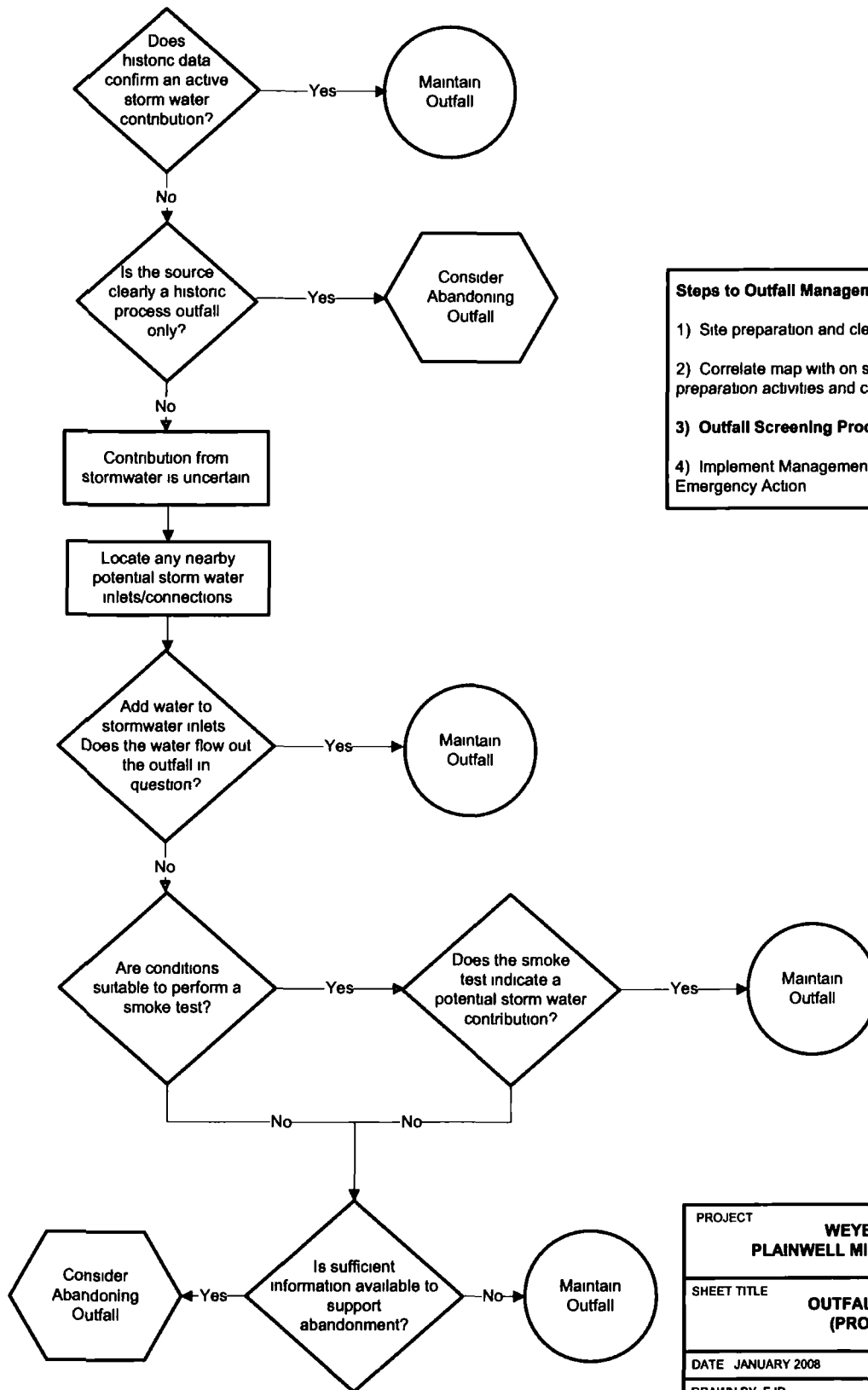
NOTES

1. LOCATIONS ARE BASED ON HISTORICAL PERMIT FILES, ENGINEERING DRAWINGS, AND RMT'S SITE OBSERVATIONS.
2. STORM SEWER AND PROCESS OUTFALL PHOTOGRAPHS WERE TAKEN BY RMT DURING A FIELD VISIT THE WEEK OF 7/16/07.



PROJECT: WEYERHAEUSER COMPANY ACTION PLAINWELL MILL BANKS EMERGENCY ACTION	
SHEET TITLE: STORM WATER AND PROCESS WATER OUTFALLS	
DRAWN BY: PYLKASE	CHECKED BY: AS NOTED
APPROVED BY: DATE PRINTED: 1/11/2008	DATE: JANUARY 2008
PROJ. NO.: 00-05130.02	FILE NO.: 51300203
FIGURE C-1	
150 N. Patrick Blvd., Suite 180 Brookfield, WI 53045-5854 Phone: 262-879-1212 Fax: 262-879-1220	

Outfall Screening Process



Steps to Outfall Management

- 1) Site preparation and cleaning of banks
- 2) Correlate map with on site observations after site preparation activities and confirm outfall locations
- 3) **Outfall Screening Process**
- 4) Implement Management Approach During Emergency Action

PROJECT **WEYERHAEUSER COMPANY
PLAINWELL MILL BANKS EMERGENCY ACTION**

SHEET TITLE **OUTFALL SCREENING PROCESS
(PROCESS/STORM WATER)**

DATE JANUARY 2008

DRAWN BY EJP

Figure C 2

RMT Integrated
Environmental
Solutions

Appendix D

Erosion Protection



Plainwell Mill Banks Emergency Action

Appendix D Erosion Protection Analysis – Former Plainwell Mill Banks

Subject	Erosion Protection Analysis – Mill Banks
Objective	To identify erosion protection needed in each construction zone and associated bank configuration to provide comparable or better protection from erosion than existing conditions
Approach	<ul style="list-style-type: none">■ Review existing conditions and identify the erosion potential of the banks based on those conditions■ Develop interim erosion control plans for each construction zone that will be as protective as existing conditions until a final erosion control plan is designed by the site owner
Outcome	Interim erosion protection will consist as necessary of material replacement including river run stone limited re grading of the bank soils and vegetation and/or temporary protective matting until vegetation can be planted

Background and Objectives

As part of the restoration of the natural flow regime in the Kalamazoo River the portion of the Plainwell dam that was occupied by the powerhouse will be removed and the flow will be routed through the former powerhouse channel. Future activities may also include removal of additional downstream dams. A 2002 study by United States Geological Survey suggests that removal of the three downstream dams will increase the slope of the river and river velocity. Because of the potential created by this flow re routing action to erode residuals along the former Plainwell Mill the United States Environmental Protection Agency has approved the Former Plainwell Mill Banks Emergency Action under Paragraph 67 of Weyerhaeuser's Consent Decree. Work will include the removal of residual materials present in the floodplain and bank areas near the river, reshaping of banks in those locations and placement of erosion controls to minimize undercutting.

In general, after residuals excavation, the banks will be reconfigured as needed to maintain the potential for erosion at the pre-existing condition or to a lower erosion potential in areas that are currently unstable. After completion of residuals removal through this action, the banks will ultimately be reconfigured as part of the owner's (City of Plainwell) planned riverwalk or other future land use. In the interim, the banks will be stabilized to limit erosion by re-vegetation and/or placement of well graded 6 inch D50 river run stone or similar material. A long term erosion control plan will be developed separately by the City to be compatible with future land use. This memorandum presents the erosion mitigation plan for the river bank adjacent to the former Mill property where residuals will be removed. The river bank has been broken into four zones based on the residuals distribution and stream bank morphology. These zones are shown in attached Figure D 1.

Zone A Erosion Mitigation

Zone A is located farthest downstream at the west end of the former mill property. The river banks are steep and heavily wooded, and the zone has a relatively large bar deposit where the residuals have accumulated. Approximately 2,600 to 3,650 cubic yards of residuals and associated soil are estimated to be targeted for removal from Zone A. Most of these residuals will be removed from these bar deposits in the floodplain areas. After the residuals are removed, the preferred erosion mitigation will include limited backfilling at the toe of the steeper bank if it is disturbed (Figure D 2). The material that is used to stabilize the toe of the bank will have similar or greater stability than the material that was removed. The proposed erosion protecting material is 6 inch D50 well graded river run stone (50 percent of the stone would be greater than the 6 inch nominal diameter). The 6 inch D50 river run stone has a nominal design velocity of 8.5 fps, given some generic assumptions, which will provide

Plainwell Mill Banks Emergency Action

improved stability along these banks. If disturbed, the bank will also be graded to a shape and an angle that has equal or greater stability than the pre excavation slope.

Care will be taken to remove only the trees and other vegetation that is necessary for the removal of the residuals. The roots and part of the trunk from trees that are removed for access will be left in place to the extent possible. If disturbed, the bank will be seeded to provide increased stability. An erosion control mat may be used to stabilize the bank until the seed can take root. Additional seeding and vegetation may be necessary in the spring to supplement areas where the fall seeding does not take hold.

Zone B Erosion Mitigation

Zone B is located just upstream from Zone A along the bank of the former Mill property. The river banks in Zone B are steep and heavily wooded. Approximately 360 to 400 cubic yards of residuals and associated soil are estimated to be removed from Zone B. Most of these residuals will be removed from the base of the steep banks. After the residuals are removed, the toe of the excavation will be backfilled with a 6 inch D50 well graded river run stone (Figure D 3). If disturbed, the bank will be graded to a shape and an angle that has greater stability than the pre excavation slope.

Zone C Erosion Mitigation

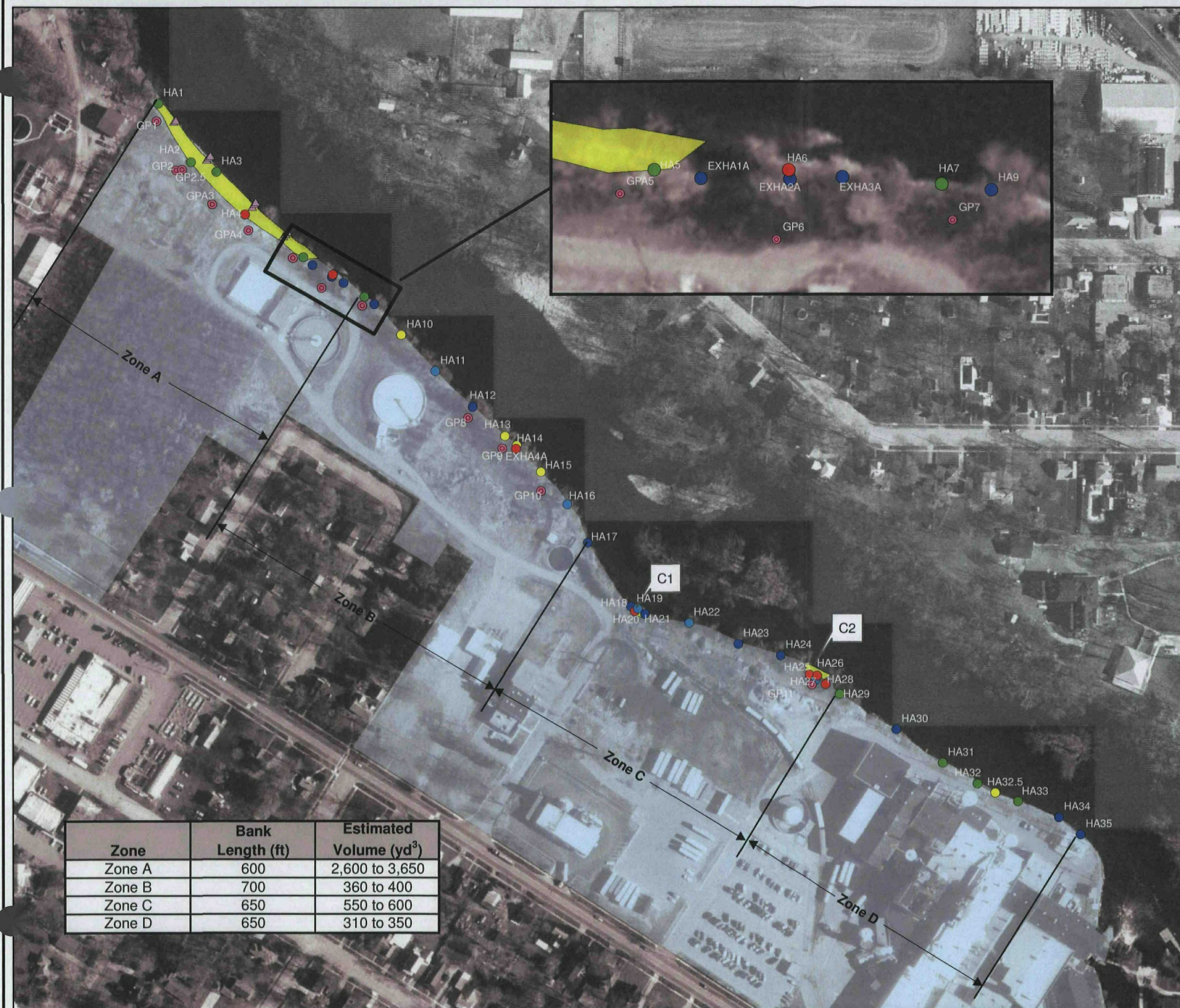
Zone C is located just upstream from Zone B along the bank of the former Mill property. The river banks in Zone C are steep and heavily wooded, similar to Zone B. However, Zone C is characterized by higher river velocities that are caused by the islands in the center of the channel that constrict the flow and direct it to the former mill bank. Approximately 550 to 600 cubic yards of residuals and associated soil are estimated to be removed from Zone C. Most of these residuals will be removed from the toe of the steep banks. After the residuals are removed, the toe of the excavation will be backfilled with a 6 inch D50 well graded river run stone. If disturbed, the bank will be graded to a shape and an angle that has greater stability than the pre excavation slope. However, due to the higher river velocities in this area, a thicker and higher layer of stone will be placed. This erosion protection plan includes placement of 6 inch D50 well graded river run stone from the toe of slope up to approximately 2 feet above the normal water elevation (Figure D-4).

Care will be taken to remove only the trees and other vegetation that is necessary for the removal of the residuals. The roots of trees that are removed for access will be left in place to the extent possible. If disturbed, the bank will be seeded to provide increased stability. An erosion control mat may be used to stabilize the bank until the seed can take root. Additional seeding and vegetation may be necessary in the spring to supplement areas where the fall seeding does not take hold.

Zone D Erosion Mitigation

Zone D is located farthest upstream along the bank of the former Mill property. The river banks in Zone D are low but steep to undercut at the waterline. The banks are primarily vegetated with reed canary grass. Approximately 310 to 350 cubic yards of residuals and associated soil are estimated to be removed from Zone D. Most of these residuals in Zone D were identified below the normal river elevation. After the residuals are removed, the preferred erosion mitigation will include some filling with a yet to be determined volume of 6 inch D50 well graded river run stone to keep the banks from sloughing into the excavation. The amount of stone needed to stabilize the area may need to be comparable to the quantity of residuals excavated below the waterline (Figure D 5).

Care will be taken to remove only the trees and other vegetation that is necessary for the removal of the residuals. If the sideslopes are disturbed, the bank will be re graded and seeded to provide increased stability. An erosion control mat may be used to stabilize the bank until the seed can take root. Additional seeding and vegetation may be necessary in the spring to supplement areas where the fall seeding does not take hold.



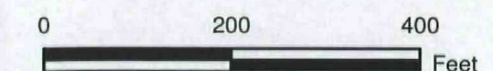
LEGEND

Hand Auger Locations- Residual Thickness (ft)

- 0.0 - 0.1
- 0.2 - 0.5
- 0.6 - 1.0
- 1.1 - 1.5
- 1.6 - 2.0
- ⊙ GeoProbe Locations (Soil)
- ▲ Sediment Locations (Sediment)

NOTES

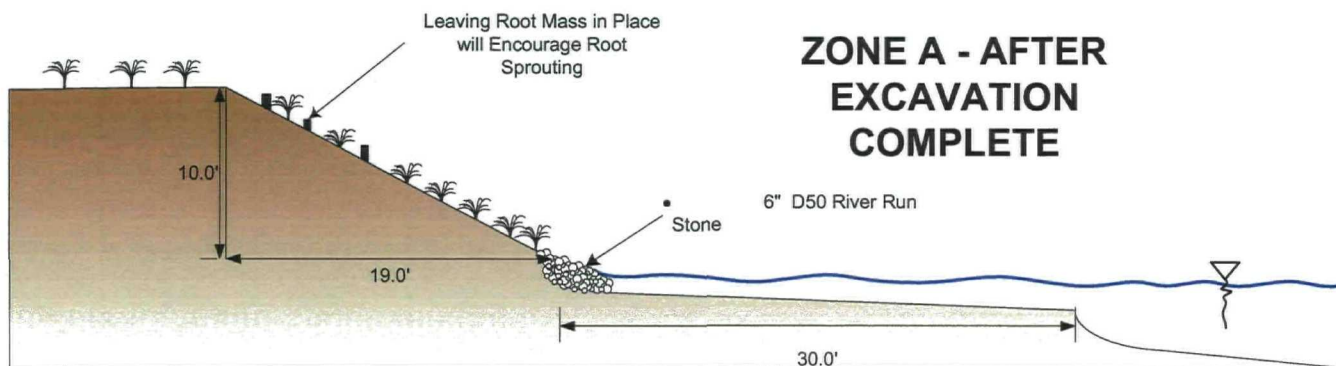
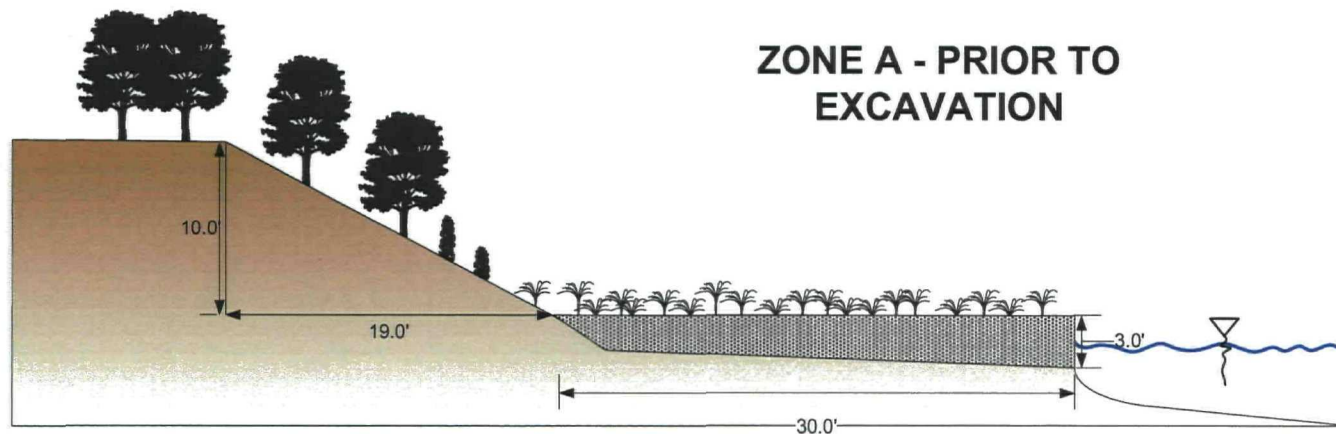
- Conditions as observed the week of 7/16/07



1 inch equals 200 feet



PROJECT: WYERHAEUSER COMPANY KALAMAZOO RIVER SUPERFUND SITE		
SHEET TITLE: HAND AUGER AND GEOPROBE LOCATIONS PLAINWELL MILL PROPERTY AND RIVERBANK		
DRAWN BY: WEBER N	SCALE: AS NOTED	PROJ. NO.: 00-05116.02
CHECKED BY:	DATE PRINTED: 1/11/2008	FILE NO.: 51160211
APPROVED BY:	FIGURE D-1	
DATE: JANUARY 2008		
150 N. Patrick Blvd., Suite 180 Brookfield, WI 53045-5854 Phone: 262-879-1212 Fax: 262-879-1220		



LEGEND

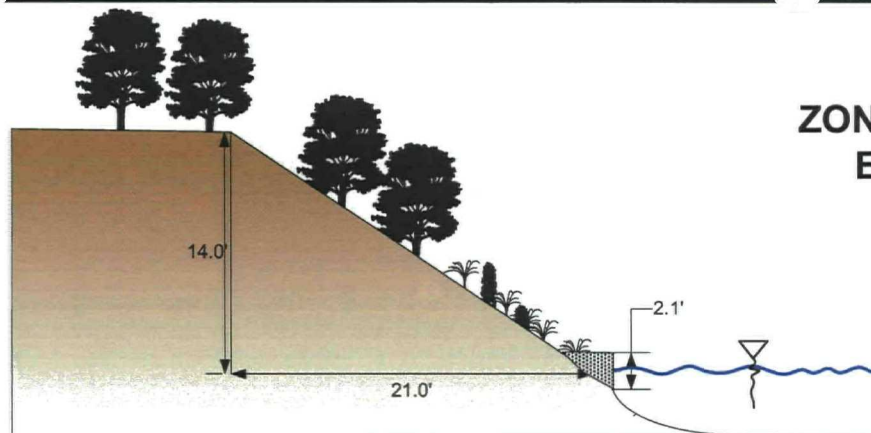
Approximate Residuals Location

PROJECT:		
WEYERHAEUSER COMPANY PLAINWELL MILL BANKS EMERGENCY ACTION		
SHEET TITLE:		
CONCEPTUAL DESIGN FOR ZONE A BANK RECONFIGURATION		
DATE: JANUARY 2008	FINAL	FIGURE D-2
DRAWN BY: NCW		
RMT		

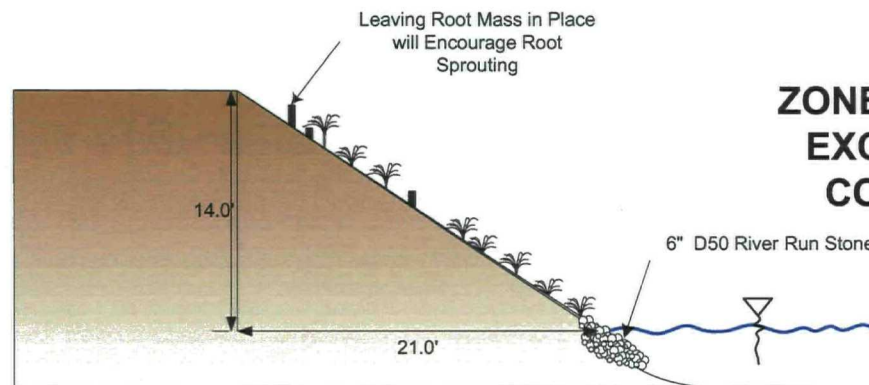
Typical Zone A Cross Section

NOTE:

1. Bank slopes and floodplain width along this reach vary from location to location.
2. Regrade bank slopes as necessary where bank is disturbed.



**ZONE B - PRIOR TO
EXCAVATION**



**ZONE B - AFTER
EXCAVATION
COMPLETE**


LEGEND

Approximate Residuals Location

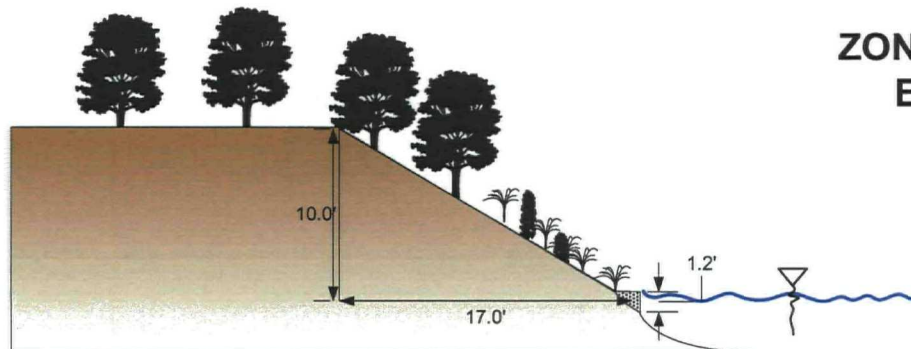
Typical Zone B Cross Section

NOTE:

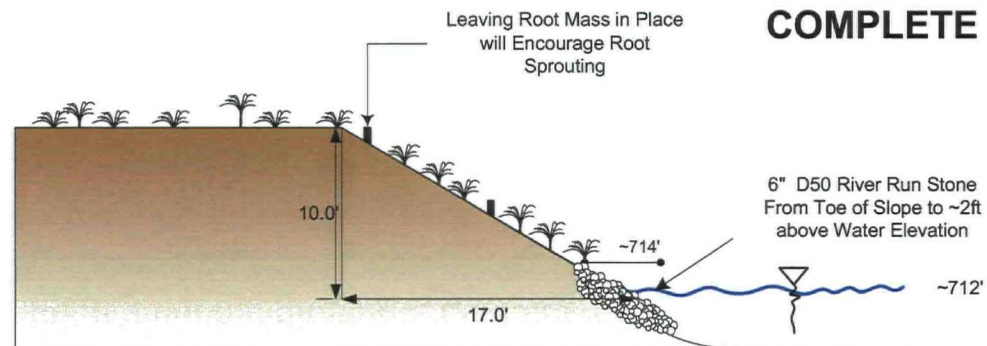
1. Bank slopes vary along this reach from location to location.
2. Regrade bank slopes as necessary where bank is disturbed.
3. Residuals estimated to be from 0 to 4 feet in width.

PROJECT:		WEYERHAEUSER COMPANY PLAINWELL MILL BANKS EMERGENCY ACTION	
SHEET TITLE: CONCEPTUAL DESIGN FOR ZONE B BANK RECONFIGURATION			
DATE: JANUARY 2008	FINAL	FIGURE D-3	
DRAWN BY: NCW			
			

ZONE C - PRIOR TO EXCAVATION



ZONE C - AFTER EXCAVATION COMPLETE



LEGEND

 Approximate Residuals Location

Typical Zone C Cross Section

NOTE:

1. Bank slopes vary along this reach and may be as steep as a 1:1 slope in certain locations.
2. Regrade bank slopes as necessary where bank is disturbed.
3. Residuals estimated to be from 0 to 4 feet in width.

PROJECT: **WEYERHAEUSER COMPANY
PLAINWELL MILL BANKS EMERGENCY ACTION**

SHEET TITLE: **CONCEPTUAL DESIGN FOR ZONE C
BANK RECONFIGURATION**

DATE: JANUARY 2008

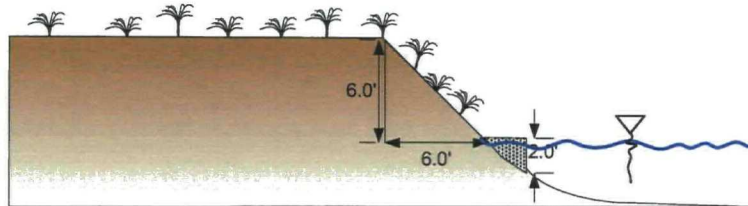
FINAL

DRAWN BY: NCW

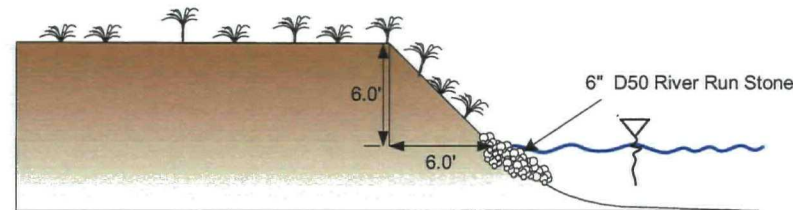
FIGURE D-4



ZONE D - PRIOR TO EXCAVATION



ZONE D - AFTER EXCAVATION COMPLETE




LEGEND

 Approximate Residuals Location

Typical Zone D Cross Section

NOTE:

1. Bank slopes vary along this reach from location to location.
2. Regrade bank slopes as necessary where bank is disturbed.
3. Residuals estimated to be from 0 to 4 feet in width.

PROJECT:		WEYERHAEUSER COMPANY PLAINWELL MILL BANKS EMERGENCY ACTION	
SHEET TITLE: CONCEPTUAL DESIGN FOR ZONE D BANK RECONFIGURATION			
DATE: JANUARY 2008		FINAL	
DRAWN BY: NCW		FIGURE D-5	
			

Appendix E

Permit Applications

U S COE/MDEQ Joint Permit Application



AGENCY USE	Previous USACE Permit or File Number	Date Received	Land and Water Management Division MDEQ File Number	AGENCY USE
	USACE File Number		Manna Operating Permit Number	
	Fee received \$			

- Complete all items in Sections 1 through 9 and those items in Sections 10 through 21 that apply to the project. Clear drawings and cross sections must be provided.

1 PROJECT LOCATION INFORMATION				
• Refer to your property's legal description for the Township, Range, and Section information, and your property tax bill for your Property Tax Identification Number(s)				
Address 200 Allegan Street Plainwell MI 49080		Township Name(s) Gun Plain	Township(s) 1 North	Range(s) 11 West
City/Village City of Plainwell		Section(s) 30		
County(ies) Allegan		Property Tax Identification Number(s) 55-030-076-00		
Name of Waterbody Kalamazoo River	Project Name or Job Number Emergency Response Plan	Subdivision/Plat N/A	Lot Number N/A	Private Claim N/A
Project types (check all that apply)	<input checked="" type="checkbox"/> private <input type="checkbox"/> building addition <input checked="" type="checkbox"/> other (explain) Remedial Action under CERCLA	<input type="checkbox"/> public/government <input type="checkbox"/> new building or structure	<input type="checkbox"/> industrial <input type="checkbox"/> building renovation or restoration	<input type="checkbox"/> commercial <input checked="" type="checkbox"/> river restoration <input type="checkbox"/> multi family <input type="checkbox"/> single family
The proposed project is on within or involves (check all that apply)				
<input type="checkbox"/> a stream	<input type="checkbox"/> a pond (less than 5 acres)	<input type="checkbox"/> a Great Lake or Section 10 Waters	<input checked="" type="checkbox"/> a natural river	<input type="checkbox"/> a new manna
<input checked="" type="checkbox"/> a river	<input type="checkbox"/> a channel/canal	<input type="checkbox"/> a designated high risk erosion area	<input type="checkbox"/> a dam	<input type="checkbox"/> a structure removal
<input type="checkbox"/> a ditch or drain	<input type="checkbox"/> an inland lake (5 acres or more)	<input type="checkbox"/> a designated critical dune area	<input type="checkbox"/> a wetland	<input type="checkbox"/> a utility crossing
<input checked="" type="checkbox"/> a floodway area	<input checked="" type="checkbox"/> a 100 year floodplain	<input type="checkbox"/> a designated environmental area	<input checked="" type="checkbox"/> 500 feet of an existing waterbody	
2 DESCRIBE PROPOSED PROJECT AND ASSOCIATED ACTIVITIES AND THE CONSTRUCTION SEQUENCE AND METHODS				
• Attach separate sheets as needed including necessary drawings sketches photographs aerials or plans				
<p><i>In a letter dated June 29 2007 the United States Environmental Protection Agency (USEPA) has acknowledged that the actions being taken for the Plainwell Time Critical Removal Action (TCRA) could cause a release of hazardous substances from the Plainwell Mill property. In order to prevent abate or minimize such a release Weyerhaeuser Company has been authorized to proceed under Paragraph 67 of their 2005 Consent decree with the removal of paper residuals from the banks of the former Plainwell Mill along the Kalamazoo River. The former mill is located at 200 Allegan Street Plainwell MI 49080. The work will take place on the banks and within the 100 year floodplain of the Kalamazoo River along the former paper mill property from the western property boundary to the mill race. For the purposes of this project the banks will be divided into four work zones denoted Zone A-D (see attached site plan for details). Work will include clearing and grubbing the banks mechanically excavating or containing approximately 3 800 cubic yards of soil and paper residuals that are present in the floodplain and bank areas near the Kalamazoo River along the former Plainwell Mill property (approximately 2 600 linear feet of bank) the reshaping of banks and placement of fill where necessary in those locations and possible construction of erosion controls to minimize bank undercutting.</i></p> <p><i>All work performed will be overseen by representatives from USEPA Region 5 and MDEQ</i></p>				
3 APPLICANT AGENT/CONTRACTOR AND PROPERTY OWNER INFORMATION				
• The applicant can be either the property owner or the person or company that proposes to undertake the activity				
• If the applicant is a corporation both the corporation and its owner must provide a written document authorizing the agent/contractor to act on their behalf				
Applicant (Individual or corporate name) Weyerhaeuser Company - Jennifer Hale		Agent/Contractor (firm name and contact person) RMT Inc - Kathy Huibregtse		
Mailing Address 32901 Weyerhaeuser Way South		Address 150 North Patrick Boulevard Suite 180		
City Federal Way	State WA	Zip Code 98001	City Brookfield	State WI
Daytime Phone Number with Area Code 253-924-3746	Cell Phone Number 253-218-5147	Daytime Phone Number with Area Code 262-879-1212	Cell Phone Number 414-687-2430	
Fax 253-924-6182	E mail jennifer.hale@weyerhaeuser.com	Fax 262-879-1220	E mail kathy.huibregtse@rmtinc.com	
<p>Is the applicant the sole owner of all property on which this project is to be constructed and all property involved or impacted by this project? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes</p> <p>If No provide a letter signed by the property owner authorizing the agent/contractor to act on his or her behalf or a copy of easements or right of ways. If multiple owners attach all property owners names mailing addresses and telephone numbers. Disclose any DEQ conservation easements or other easements deed restrictions leases or any other encumbrance upon the property in the project area. A copy of the land restriction must be provided.</p>				



Property Owner's Name (If different from applicant) <i>City of Plainwell - Eric Wilson City Manager</i>		Mailing Address <i>141 N Main Street</i>		
Daytime Phone Number with Area Code <i>269 685 6821</i>	Cell Phone Number - -	City <i>Plainwell</i>	State <i>MI</i>	Zip Code <i>49080</i>

4 PROPOSED PROJECT PURPOSE INTENDED USE AND ALTERNATIVES CONSIDERED (Attach additional sheets if necessary)

- The purpose must include any new development or expansion of an existing land use
- Include a description of alternatives considered to avoid or minimize resource impacts. Include factors such as but not limited to: alternative construction technologies, alternative project layout and design, alternative locations, local land use regulations and infrastructure, and pertinent environmental and resource issues.
- For utility crossings, include both alternative routes and alternative construction methods.

In a letter dated June 29 2007 the United States Environmental Protection Agency (USEPA) has acknowledged that the actions being taken for the Plainwell Time Critical Removal Action (TCRA) could cause a release of hazardous substances from the Plainwell Mill Property. In order to prevent abate or minimize such a release Weyerhaeuser Company has been authorized to proceed under Paragraph 67 of their 2005 Consent decree

The City of Plainwell plans to create a riverwalk along the banks of the former Plainwell Mill

Alternatives considered include

Driving sheetpile along the banks to contain contaminated soil. This was deemed not approvable.

Manual excavation instead of mechanical excavation was considered in order to leave large trees in place along the banks for erosion control. After discussions with the EPA and MDEQ it was decided that digging around the trees would most likely kill them so removing the trees (while leaving the root systems in place for erosion control) and using an excavator would be the most efficient removal method.

5 LOCATING YOUR PROJECT SITE

- Provide the requested information listed below to help staff locate your project site
- Attach a copy of a map such as a plat, county, or USGS topographic map, clearly showing the site location and include an arrow indicating the north direction
- Project area must be staked at the time of application submittal

Is there an access road to the project? ☐ No ☒ Yes (If Yes, type of road, check all that apply) ☒ private ☐ public ☐ improved ☒ unimproved

Name of roads at closest main intersection: *Main Street* and *Allegan Street (Michigan State Highway 89)*

Directions from main intersection: *Northwest approximately 0.4 miles, turn right on Cedar Street*

Style of house or other building on site: ☐ ranch ☐ 2 story ☐ cape cod ☐ bi level ☐ cottage/cabin ☐ pole barn ☐ none ☒ other (describe) *Former Mill building, former aeration basin and clarifiers for the mill*

Color: _____ Color of adjacent property house and/or buildings: _____

House number: _____ Address is visible on: ☐ house ☐ garage ☐ mailbox ☐ sign ☐ other (describe): _____

Street name: _____ Fire lane number: _____ Lot number: _____

How can your site be identified if there is no visible address? *Large abandoned Paper mill on-site*

Provide directions to the project site with distances from the best and nearest visible landmark and waterbody: *From US 131 take exit #49A/Allegan/Otsego East onto Allegan Street (Michigan State Highway 89). Travel approximately 1 mile East and turn left (North) onto Cedar Street. The site entrance is approximately 100 feet ahead on Cedar Street. See Figure 1.*

Does project cross boundaries of two or more political jurisdictions? (City/Township, Township/Township, County/County, etc.)

☒ No ☐ Yes (If Yes, list jurisdiction names): _____

6 List all other federal, interstate, state, or local agency authorizations required for the proposed activity, including all approvals or denials received.

Agency	Type approval	Identification number	Date applied	Date approved / denied	If denied, reason for denial
<i>U S EPA</i>	<i>Authorization to perform the implementation of the emergency response under Section XVII</i>	<i>Paragraph 67 of Weyerhaeuser's January 2005 Consent Decree with the U S EPA</i>			

7 If a permit is issued, date activity will commence (M/D/Y): <i>09/01/2007</i>	Proposed completion date (M/D/Y): <i>11/08/2007</i>
Has any construction activity commenced or been completed in a regulated area? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If Yes, identify the portion(s) underway or completed on drawings or attach project specifications and give completion date(s) (M/D/Y): <i>/ /</i>	Were the regulated activities conducted under a MDEQ permit? <input type="checkbox"/> No <input type="checkbox"/> Yes If Yes, list the MDEQ permit number: _____
Are you aware of any unresolved violations of environmental law or litigation involving the property? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (If Yes, explain): _____	

8 PUBLIC NOTIFICATION (Attach additional sheets if necessary)

- Complete information for all adjacent and impacted property owners and the lake association or established lake board, including the contact person's name.
- If you own the adjacent lot, provide the requested information for the first adjacent parcel beyond your property line.



Property Owner's Name	Mailing Address	City	State	Zip Code
<i>Public notified by USEPA in conjunction with the City of Plainwell</i>				
Name of <input type="checkbox"/> Established Lake Board <input type="checkbox"/> or Lake Association and the Contact Person's name, phone number, and mailing address				
9. APPLICANT'S CERTIFICATION READ CAREFULLY BEFORE SIGNING I am applying for a permit(s) to authorize the activities described herein. I certify that I am familiar with the information contained in this application, that it is true and accurate, and to the best of my knowledge is in compliance with the State Coastal Zone Management Program and the National Flood Insurance Program. I understand that there are penalties for submitting false information and that any permit issued pursuant to this application may be revoked if information on this application is untrue. I certify that I have the authority to undertake the activities proposed in this application. By signing this application, I agree to allow representatives of the MDEQ, USACE and/or their agents or contractors to enter upon said property in order to inspect the proposed activity site and the completed project. I understand that I must obtain all other necessary local, county, state, or federal permits and that the granting of other permits by local, county, state, or federal agencies does not release me from the requirements of obtaining the permit requested herein before commencing the activity. I understand that the payment of the application fee does not guarantee the issuance of a permit. <ul style="list-style-type: none">• All applicants must complete all of the items in Sections 1 through 9 on pages 1 and 2 of this application.• Complete those items in Sections 10 through 21 that apply to the project. Submit only those pages where you have provided information.• Your application will not be processed if the application form is not completely filled out.• List here the application page numbers being submitted and a brief description of other attachments included with your application. Submitting pages 1-4, 6, 7. Attachments include: removal volume detail, site locator map, overall site plan, plan and cross section views, bank testing results, photographic log, and the letter authorizing the work on the property.• Submit 8.5 by 11, 8.5 by 14, or 11 by 17" size drawings with 4 copies. The USACE requires one set of drawings on 8.5 x 11" paper with all notations clearly legible. Larger copies may be submitted in addition to the standard size copies.• A letter of authorization from the owner must be included if not signed below by the owner.				
<input type="checkbox"/> Property Owner <input type="checkbox"/> Agent/Contractor <input checked="" type="checkbox"/> Corporation - Title	Printed Name Jennifer Hale	Signature	Date (M/D/Y) / /	



10 PROJECTS IMPACTING WETLANDS OR FLOODPLAINS OR LOCATED ON AN INLAND LAKE OR STREAM OR A GREAT LAKE <ul style="list-style-type: none">• Check boxes A through N that may be applicable to your project and provide the requested information• If your project may affect wetlands also complete Section 12 If your project may impact regulated floodplains also complete Section 13• Provide an overall site plan showing existing lakes streams wetlands and other water features existing structures and the location of all proposed structures land change activities and soil erosion and sedimentation control measures Review sample drawings for guidance in completing site-specific drawings for your project• Some projects on the Great Lakes require an application for conveyance prior to Joint Permit Application completeness• On a Great Lake use IGLD 85 <input type="checkbox"/> surveyed <input type="checkbox"/> converted from observed still water elevation On inland waters <input checked="" type="checkbox"/> NGVD 29 <input type="checkbox"/> local datum <input type="checkbox"/> other• Observed water elevation (ft) 710 60 (zone A) 713 10 (zone D) date of observation (M/D/Y) 07/19/2007			
<input checked="" type="checkbox"/> A PROJECTS REQUIRING FILL (See All Sample Drawings) <ul style="list-style-type: none">• To calculate volume in cubic yards (cu yd) multiply the average length in feet (ft) times the average width (ft) times the average depth (ft) and divide by 27• Attach both plan and cross section views to scale showing maximum and average fill dimensions			
(Check all that apply) <input checked="" type="checkbox"/> floodplain fill <input type="checkbox"/> wetland fill <input checked="" type="checkbox"/> nrap <input type="checkbox"/> seawall bulkhead or revetment <input type="checkbox"/> bridge or culvert <input type="checkbox"/> boat launch <input type="checkbox"/> off shore swim area <input type="checkbox"/> beach sanding <input type="checkbox"/> boatwell <input type="checkbox"/> cnb dock <input type="checkbox"/> other			
Fill dimensions (ft) Length Varies width Varies maximum depth Varies		Total fill volume (cu yd) Fill will be placed as needed to maintain bank stability Decisions made in the field will be coordinated with EPA and MDEQ	
Type of clean fill <input type="checkbox"/> pea stone <input type="checkbox"/> sand <input checked="" type="checkbox"/> gravel <input type="checkbox"/> wood chips <input checked="" type="checkbox"/> other Clean soil		Will filter fabric be used under proposed fill? <input type="checkbox"/> No <input type="checkbox"/> Yes (If Yes type) To be determined in field	
Source of clean fill <input type="checkbox"/> on site, If on site, show location on site plan <input checked="" type="checkbox"/> commercial <input type="checkbox"/> other, If other, attach description of location			
Fill will extend Varies feet into the water from the shoreline and upland Varies feet out of the water		Fill volume below OHWM (cu yd) Varies up to 3810	
<input checked="" type="checkbox"/> B PROJECTS REQUIRING DREDGING OR EXCAVATION (For dredging projects see Sample Drawing 7 for excavation see other applicable Sample Drawings) <ul style="list-style-type: none">• To calculate volume in cubic yards (cu yd) multiply the average length in feet (ft) times the average width (ft) times the average depth (ft) and divide by 27• Attach both plan and cross section views to scale showing maximum and average dredge or excavation dimensions• The applicant will be notified if sediment sampling is required			
(Check all that apply) <input checked="" type="checkbox"/> floodplain excavation <input type="checkbox"/> wetland dredge or draining <input type="checkbox"/> seawall bulkhead or revetment <input type="checkbox"/> navigation <input type="checkbox"/> boat well <input type="checkbox"/> boat launch <input checked="" type="checkbox"/> other River Banks			
Total dredge/excavation volume (cu yd) See Attachment 1	Dimensions (See attached calculations) length See attachment 1 width depth	Dredge/excavation volume below OHWM (cu yd) See Attachment 1	Method and equipment for dredging Backhoe/Long reach excavator
Has proposed dredge material been tested for contaminants? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (If Yes attach testing results)		Will dredged or excavated spoils be placed <input type="checkbox"/> on site <input checked="" type="checkbox"/> off site Attach a detailed disposal area site plan location map If dispose off site provide address and letter of authorization A few local disposal locations have been identified that will except the material however the exact disposal location has not been determined at present Will continue to work with USEPA and MDEQ on finalizing the disposal location	
Has this same area been previously dredged? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (If Yes provide date and permit number if available) / / /			
If Yes, are you proposing to enlarge the previously dredged area <input type="checkbox"/> No <input type="checkbox"/> Yes			
Is long-term maintenance dredging planned? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (If Yes when and how much?)			
<input checked="" type="checkbox"/> C PROJECTS REQUIRING RIPRAP (See Sample Drawings 2, 3, 8, 12, 14, 17, 22, and 23 Others may apply)			
Riprap waterward of the <input type="checkbox"/> shoreline OR <input checked="" type="checkbox"/> ordinary high water mark		Dimensions (ft) length Varies width depth	Volume (cu yd) Varies rip rap will be placed as necessary based on conditions in the field in consultation with USEPA and MDEQ
Riprap landward of the <input type="checkbox"/> shoreline OR <input checked="" type="checkbox"/> ordinary high water mark		Dimensions length Varies width depth	Volume (cu yd) Varies see above
Type of nrap <input checked="" type="checkbox"/> field stone <input type="checkbox"/> angular rock <input type="checkbox"/> other		Will filter fabric be used under proposed nrap? <input type="checkbox"/> No <input type="checkbox"/> Yes (If Yes type) To be determined in the field in consultation with USEPA and MDEQ oversight personnel	
<input checked="" type="checkbox"/> D SHORE PROTECTION PROJECTS (See Sample Drawings 2, 3, and 17) (check all that apply) <input checked="" type="checkbox"/> riprap - length (ft) Varies <input type="checkbox"/> seawall/bulkhead - length (ft) <input type="checkbox"/> revetment - length (ft)			
Distances of project from both property lines (ft) Varies			
<input type="checkbox"/> E DOCK PIER - MOORING PILINGS (See Sample Drawing 10) NA			
Type <input type="checkbox"/> open pile <input type="checkbox"/> filled <input type="checkbox"/> cnb		Seasonal structure? <input type="checkbox"/> No <input type="checkbox"/> Yes	
Proposed structure dimensions (ft) length width		Dimensions of nearest adjacent structures (ft) length width	

**12 ACTIVITIES THAT MAY IMPACT WETLANDS** (See Sample Drawings 8 & 9) *NA*For information on the MDEQ's *Wetland Assessment Program*, visit the LWMD website or call 517 373 1170Check all that apply) ☐ fill (Section 10A) ☐ dredge or excavation (Section 10B) ☐ boardwalk or deck (Section 10I) ☐ dewatering
☐ fences (Section 10M) ☐ bridges and culverts (Section 14) ☐ draining surface water ☐ otherHas a professional wetland delineation been conducted for this parcel? ☐ No ☐ Yes (If Yes provide a copy if federal method was used, supply data sheets) Applicant purchased property ☐ before OR ☐ after October 1, 1980Is there a recorded DEQ easement on the property? ☐ No ☐ Yes (If Yes provide the number)Has the MDEQ conducted a *wetland assessment* for this parcel? ☐ No ☐ Yes (If Yes, provide a copy)

Describe the wetland impacts proposed use or development and efforts to avoid/minimize impacts Describe the wetland alternatives and provide the type and amount of mitigation proposed if more than 1/3 acre is to be impacted

Is any grading or mechanized land clearing proposed? ☐ No ☐ Yes
(If Yes show locations on site plan)Has any of the proposed grading or mechanized land clearing been completed? ☐ No ☐ Yes (If Yes label and show locations on site plan)

- Complete the wetland dredge and wetland fill dimension information for each impacted wetland area
- Attach additional sheets if necessary and label the impacted wetland areas on a site plan drawn to scale Attach at least one typical *cross section* for each wetland dredge and/or fill area Also complete Section 10A for fill and Section 10B for dredge or excavation activities
- If dredge material will be disposed of on site, show the location on site plan in an *upland area* and include *soil erosion and sedimentation control measures*

Wetland dredge dimensions	maximum length (ft)	maximum width (ft)	dredge area <input type="checkbox"/> acres <input type="checkbox"/> sq ft	average depth (ft)	dredge volume (cu yd)
Wetland fill dimensions	maximum length (ft)	maximum width (ft)	fill area <input type="checkbox"/> acres <input type="checkbox"/> sq ft	average depth (ft)	fill volume (cu yd)

Total wetland dredge area
☐ acres ☐ sq ftTotal wetland
dredge volume (cu yd)Total wetland fill area
☐ acres ☐ sq ftTotal wetland
fill volume (cu yd)The proposed project will be serviced by ☐ public sewer
☐ private septic system (If septic system show existing and new or expanded system on plans)If septic system has application been made to the
County Health Department for a permit? ☐ No ☐ YesIf Yes has permit been issued?
☐ No ☐ Yes
(If Yes provide a copy)**13 FLOODPLAIN ACTIVITIES** (See Sample Drawing 5 Others may apply)Attach additional sheets with the requested information when multiple *floodplain* activities are included in this applicationCheck all that apply) ☒ fill ☒ excavation ☐ otherSite is *varies along banks 3 to 10* feet above ☐ ordinary high water mark (OHWM) OR ☒ observed water level *710 60 (zone A) 713 10 (zone D)*Date of observation (M/D/Y) *07/19/2007*Fill volume below the 100 year
floodplain elevation (cu yd) *Fill will be placed as needed to maintain bank
stability Decisions made in the field will be coordinated with EPA and
MDEQ*Compensating cut volume below the
100 year floodplain elevation (cu yd) *Approximately 3 810***14 BRIDGES AND CULVERTS** (Including Foot and Cart Bridges) *NA*

- Provide detailed site-specific drawings of existing and proposed *Plan View* (Sample Drawing 14A) *Elevation View* (Sample Drawing 14B) *Stream and Floodplain Cross-Section* (Sample Drawing 14C) *Stream Profile* (Sample Drawing 14D) and *Floodplain Fill* (Sample Drawing 5) at a scale adequate for detailed review
- Provide the requested information that applies to your project If there is not an existing *structure* leave the Existing column blank
- If you choose to have a Licensed Professional Engineer "certify" that your project will not cause a *harmful interference* for a range of flood discharges up to and including the 100 year flood discharge then you must use the Required Certification Language You may request a copy by phone email or mail A hydraulic report supporting this certification may also be required
- Attach additional sheets with the requested information when multiple crossings are included in this application

	Existing	Proposed		Existing	Proposed
Culvert type (box circular arch) and material (corrugated metal, timber, concrete, etc)			Bridge span (length perpendicular to stream) OR culvert <input type="checkbox"/> width <input type="checkbox"/> diameter (ft)		
Bridge type (concrete box beam timber concrete I-beam, etc)			Bridge width (parallel to stream) OR culvert length (ft)		
Entrance design (projecting, mitered, wingwalls, etc)			Bridge rise (from bottom of beam to streambed) OR Culvert rise (from top of culvert to streambed) (ft)		
Total structure waterway opening above streambed (sq ft)					
<input type="checkbox"/> elevation of culvert crown	Upstream		Higher elevation of <input type="checkbox"/> culvert invert OR	Upstream	
<input type="checkbox"/> bottom of bridge beam (ft)	Downstream		<input type="checkbox"/> streambed within culvert (ft)	Downstream	
Elevation of road grade at structure (ft)			Distance from low point of road to mid point of bridge crossing (ft)		
Elevation of low point in road (ft)					



Cross sectional area of primary channel (sq ft) See Sample Drawing 14C)	Average stream width at OHWM outside the influence of the structure (ft)	Upstream Downstream
--	---	------------------------

Reference datum used (show on plans with description) ☐ NGVD 29 ☐ IGLD 85 (Great Lakes coastal areas) ☐ local

High water elevation – describe reference point and highest known water level above or below reference point and date of observation

15 STREAM RIVER OR DRAIN CONSTRUCTION ACTIVITIES (No sample drawing available)

- Complete Section 10A for fill Section 10B for dredge or excavation and Section 10C for *nrap* activities
- If side casting or other proposed activities will impact wetlands or floodplains complete Sections 12 and 13 respectively
- Provide an overall site plan showing existing lakes streams wetlands and other water features existing structures and the location of all proposed structures and land change activities Provide cross section (elevation) drawings necessary to clearly show existing and proposed conditions Be sure to indicate drawing scales
- For activities on legally established county drains provide original design and proposed dimensions and elevations

(check all that apply) ☐ maintenance ☐ improvement ☐ relocation ☐ enclosure ☐ new drain ☐ wetlands ☒ other *Floodplain*Dimensions (ft) of existing stream/drain channel to be worked on length *2 600* width *Varies (5 -30)* depth *Varies (1 -3)*Dimensions (ft) of new relocated or enclosed stream/drain channel length *2 600* width *Varies (5 -30)* depth *Varies (1 -3)* Volume of Dredge/
excavation (cu yds) *Approximately 3 810*Existing channel average water depth in a normal year (ft) *Approximately 4* Proposed side slopes (vertical / horizontal) *Varies side slopes will be no steeper or erosive than existing conditions*

How will slopes and bottom be stabilized?

*By means determined in the field under the oversight of USEPA region 5 and MDEQ*Will old/enclosed stream channel be backfilled to top of bank grade? ☒ No ☐ Yes Length of channel
to be abandoned (ft) *NA* Volume of fill (cu yds)
*NA*If an enclosed structure is proposed check type ☐ concrete ☐ corrugated metal ☐ plastic ☐ otherDimensions of the structure size length *NA* volume of fill *NA*Will spoils be disposed of on site? ☒ No ☐ Yes (If Yes show location of spoils on site plan in an upland area) *The exact disposal location has not been determined at present The disposal location will be chosen in consultation with USEPA and MDEQ*Reference datum used (show on plans with description) ☒ NGVD 29 ☐ IGLD 85 (Great Lakes coastal areas) ☐ local**16 DRAWDOWN OF AN IMPOUNDMENT** *NA*

- If wetlands will be impacted, also complete Section 12

Type of drawdown ☐ over winter ☐ temporary ☐ one time event ☐ annual event ☐ permanent (dam removal) ☐ other

Reason for drawdown

Has there been a previous drawdown? ☐ No ☐ Yes (If Yes provide date (M/D/Y) / / Previous MDEQ permit
number if knownDoes waterbody have established legal lake level? ☐ No ☐ Yes ☐ Not Sure Dam ID Number if knownExtent of vertical
drawdown (ft) Impoundment
design head (ft) Number of adjacent or
impacted property ownersDate drawdown would start
(M/D/Y) / / Date drawdown
would stop (M/D/Y) / / Rate of drawdown
(ft/day)Date refilling would start
(M/D/Y) / / Date refill
would end (M/D/Y) / / Rate of refill
(ft/day)Type of outlet discharge structure to be used
☐ surface ☐ bottom ☐ mid-depth Impoundment area at
normal water level (acres) Sediment depth behind impoundment
discharge structure (ft)**17 DAM EMBANKMENT DIKE SPILLWAY OR CONTROL STRUCTURE ACTIVITIES** (See Sample Drawing 15) *NA*

- If wetlands will be impacted also complete Section 12
- Attach site specific conceptual plans for construction of a new dam reconstruction of a failed dam or enlargement of an existing dam for resource impact review Detailed engineering plans are required once the activity has been determined to be permissible from an environmental standpoint
- Attach detailed engineering plans for a dam repair, dam alteration, dam abandonment, or dam removal

Which one best describes your project? ☐ new dam construction ☐ reconstruction of a failed dam ☐ enlargement of an existing dam
☐ dam repair ☐ dam alteration ☐ dam abandonment ☐ dam removal ☐ otherDam ID Number
known Type of outlet discharge structure
☐ surface ☐ bottom ☐ mid depth Will proposed activities require a drawdown of the waterbody to complete the
work? ☐ No ☐ Yes (If Yes also complete Section 16)Volume (cu yd) Dredging/excavation
Volume (cu yd) Fill volume
(cu yd) Does structure allow complete
drainage of waterbody? ☐ No ☐ YesBenchmark
elevation (ft) Datum used
☐ Local ☐ NGVD 29 ☐ other Describe benchmark and show on plans

Attachment 1

Section 10B Programs requiring dredging or excavation

Excavation area dimensions and estimated removal volume

Zone	Bank Length (ft)	Estimated Volume (Cuyd)
Zone A	600	2 600
Zone B	700	360
Zone C	625	540
Zone D	625	310
Total	2 550	3,810

The majority of the material excavated will be from below the ordinary high water mark (OHWM)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604 3590

70656-B-4

FINAL

EXECUTED

REPLY TO THE ATTENTION OF
C 14J

July 28 2005

VIA FEDERAL EXPRESS

John P Gross
Senior Environmental Manager
Weyerhaeuser Company
33810 Weyerhaeuser Way S
Mail Stop EC2-2C1
Federal Way WA 98001

Re Designation of Weyerhaeuser as Authorized Agent of the United States
Environmental Protection Agency for the Purpose of Entry onto Property Owned
or Controlled by Plainwell Inc or its successors and assigns

Dear Mr Gross

By this letter the United States Environmental Protection Agency (EPA) designates Weyerhaeuser and its officers employees agents, contractors consultants and representatives as EPA's authorized representatives solely for purpose of entry onto (1) the Plainwell Mill Property ('Mill ') located at 200 Allegan Street in Plainwell Michigan and (2) the 12th Street Landfill - Operable Unit 4 ("OU4 ") located on the Kalamazoo River approximately 1.5 miles northwest of Plainwell, Michigan. As of the date of this letter the Mill and a part of OU4 are owned and/or controlled by Plainwell Inc.


Pursuant to the Plainwell Settlement Agreement Plainwell Inc has granted access rights to the Mill and part of OU4 to EPA and its representatives. Access to the Mill and OU4 is needed to implement the terms of the Consent Decree entered into between the EPA and Weyerhaeuser for response activities at the Mill and OU4.

EPA is authorized to designate Weyerhaeuser as its representative pursuant to section 104(e)(1) and (3) of the Comprehensive Environmental Response, Compensation, and Liability Act as amended (CERCLA), 42 U.S.C. § 9604 (e)(1) and (3), and the National Contingency Plan 40 C.F.R. Section 300.400(d)(3). The authority granted to the President in Section 104(e) of CERCLA was delegated to EPA in Executive Order 12580 issued January 23, 1987, and re delegated to the Regional Administrators by EPA Delegation No. 14-6 on September 13, 1987.


This letter additionally reaffirms the obligations of Weyerhaeuser under the Consent Decree to pay the expenses that will be incurred by the United States in obtaining access on its behalf and to indemnify save and hold harmless the United States for any and all claims or causes of action arising from or on account of acts or omissions of Weyerhaeuser officers, employees, agents contractors subcontractors and any persons acting on their behalf or under their control, in carrying out activities pursuant to the Consent Decree

Please acknowledge your receipt and agreement with the contents of this letter by signing where indicated below and returning this letter to Eileen Furey Associate Regional Counsel
Office of Regional Counsel United States Environmental Protection Agency Region 5, 77 W Jackson Blvd. C-14J Chicago IL 60604

Sincerely


Eileen L. Furey
Associate Regional Counsel

Acknowledgment of Receipt & Agreement


Authorized Representative of Weyerhaeuser
To Environmental Manager

cc Tim Prendiville (SR 6J)
Shari Kolak (SR-6J)
Renita Ford (DOJ)
Pamela Barker



LEGEND

— PROPERTY BOUNDARIES



0 1,000 2,000 4,000
FEET

1 INCH EQUALS 2,000 FEET
1:24,000



PROJECT LOCATION

BASE MAP FROM USGS 7.5 MINUTE QUADRANGLE, OSTEGO, 1967, REVISED 1973.



744 Heartland Trail
Madison, WI 53717 - 1934
P.O. Box 8923
Madison, WI 53708 - 8923
Phone: 608-831-4444
Fax: 608-831-3021

SITE LOCATION MAP

PLAINWELL MILL BANKS EMERGENCY ACTION
PLAINWELL MILL
PLAINWELL, MICHIGAN

DRAWN BY:	PYLKASE
APPROVED BY:	
PROJ. NO.:	00-05130.03
FILE NO.:	51300301
DATE:	AUGUST 2007

Levels
(1) 1-5, 7-21, 23-26, 42
(2) 1-63
(3) 1-63
(4) 1-63

Logical Names
(1) bmc
(2) bmr
(3) RF 2
(4) RF 3

Reference File
Ref. File 1 - J:\05130\02\mill\bmcc033005.dgn
Ref. File 2 - J:\05130\02\bmrrmt.DGN
Ref. File 3 - J:\05130\02\surface.mll.dgn
Ref. File 4 - J:\05130\02\11x17bdr.dgn

Plot
Design File - J:\05130\02\siteplan.plt
fiebrantPlot Date - Thu Aug 30 09:09:15 2007
Plot File - J:\05130\02\siteplan.plt
Pen Table - K:\CADNET2\TBL\MSV8Default7000_PDF.tbl
Levels On - 1-63



LEGEND

 APPROXIMATE EXTENT OF EMERGENCY ACTION
(SEE FIGURES 4-7 FOR ZONE DETAILS)

PROJECT: **WEYERHAEUSER PLAINWELL MILL BANKS
EMERGENCY RESPONSE PLAN DESIGN REPORT
PLAINWELL, MI**

SHEET TITLE:
PROJECT SITE PLAN

DRAWN BY: fiebrant	SCALE: 1"=200'	PROJ. NO. 5130.02
CHECKED BY:		FILE NO. siteplan.plt
APPROVED BY:	DATE PRINTED:	FIGURE 3
DATE: January 2008		

RMT

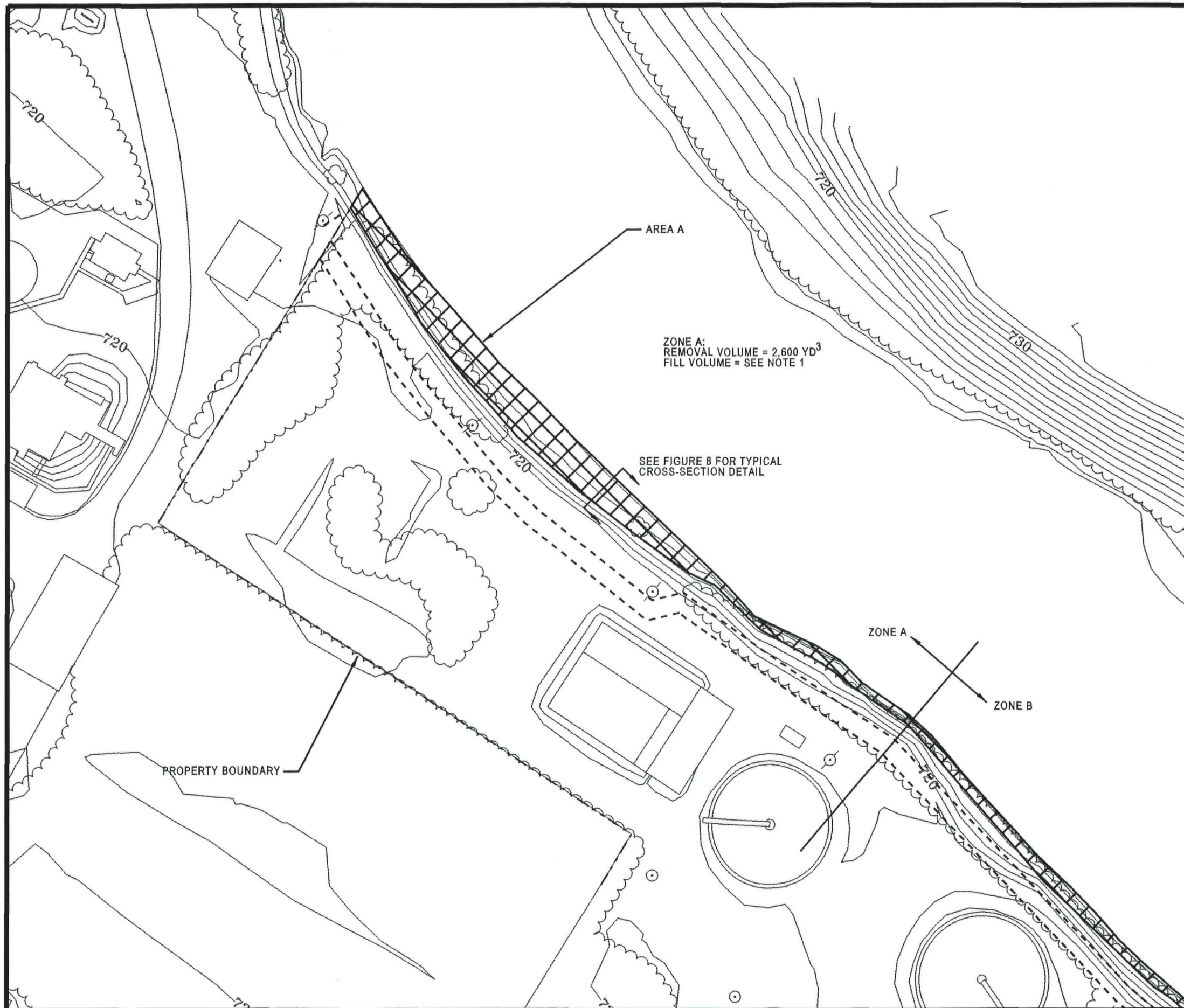
744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

Levels
(1) 1-5,7-16,18-21,23-25,42
(2) 1-63
(3) 1-63
(4) 1-63

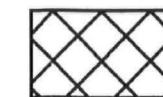
Logical Names
(1) bmc
(2) sur
(3) RF2
(4) bdr

Reference File
Ref. File 1 - J:\05130\02\millbmc033005.dgn
Ref. File 2 - J:\05130\02\surface_mill.dgn
Ref. File 3 - J:\05130\02\bmrrmt.DGN
Ref. File 4 - J:\05130\02\11x17bdr.dgn

Plot
Design - \05130\02\zone_a.plt
fielbrant Plot Date - Thu Aug 30 09:09:06 2007
Plot File - J:\05130\02\zone_a.plt
Pen Table - K:\CADNET\TBL\MSV8Default7000_PDF.tbl
Levels On - 1-63



LEGEND



APPROXIMATE EXTENT OF BANK
REWORK & SOIL/RESIDUAL
EXCAVATION



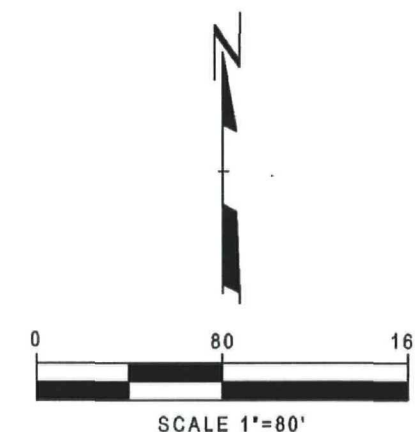
APPROXIMATE EXTENT OF
WORK PLATFORM



UTILITY POLE

NOTE

1. RIP-RAP WILL BE PLACED IN EXCAVATED AREA AS NECESSARY TO STABILIZE BANKS. VOLUME TO BE DETERMINED IN THE FIELD.



PROJECT: **WEYERHAEUSER PLAINWELL MILL BANKS
EMERGENCY RESPONSE PLAN DESIGN REPORT
PLAINWELL, MI**

SHEET TITLE:

ZONE A

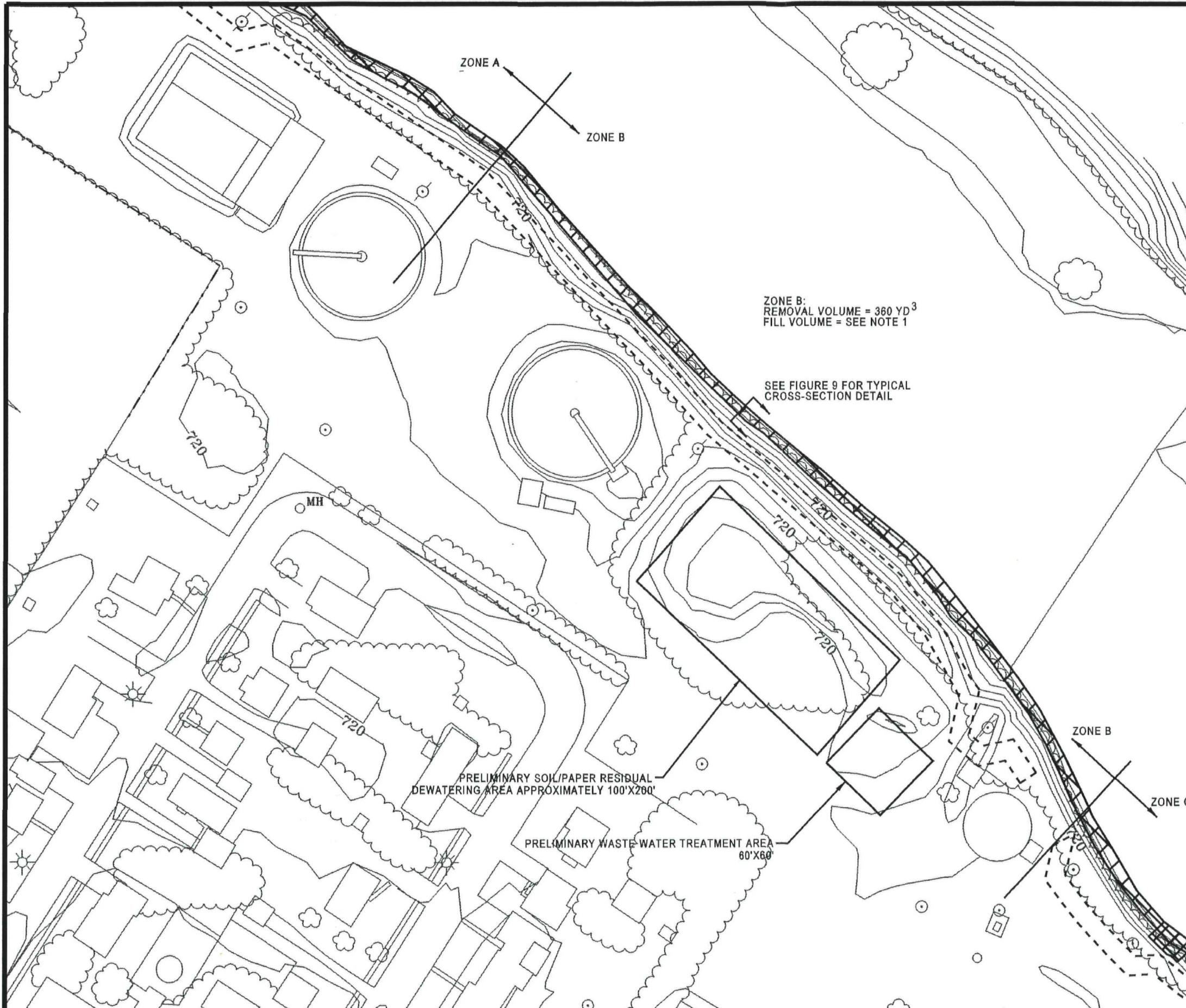
DRAWN BY: fielbrant	SCALE: 1"=80'	PROJ. NO. 5130.02
CHECKED BY:		FILE NO. zone_a.plt
APPROVED BY:	DATE PRINTED:	FIGURE 4
DATE: January 2008		

RMT

744 Heartland Trail
Madison, WI 53717-1934


P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

Plot ,
Design Plot
Design Plot Date = Thu Aug 30 09:08:58 2007
Plot File = J:\05130\02\zone_b.prf
Pen Table = K:\CADNET2\TBL\MSV8default7000_PDF.tbl
Scale = 1:63



NOTE

-

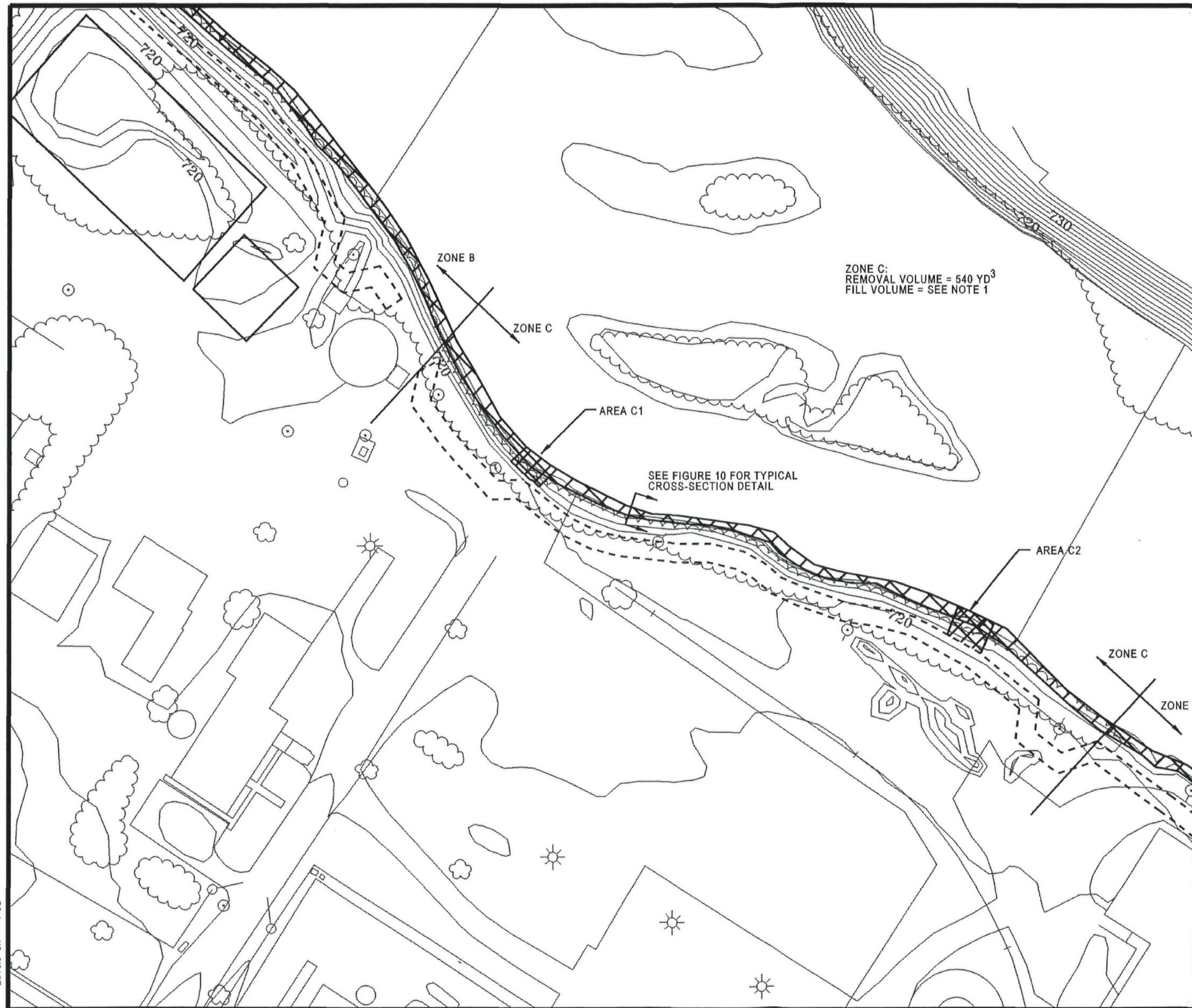
PROJECT: WEYERHAEUSER PLAINWELL MILL BANKS EMERGENCY RESPONSE PLAN DESIGN REPORT PLAINWELL, MI		
SHEET TITLE: ZONE B		
DRAWN BY: fiebrant	SCALE: 1"=80'	PROJ. NO. 5130.02
CHECKED BY:		FILE NO. zone_b.plt
APPROVED BY:	DATE PRINTED:	FIGURE 5
DATE: January 2008		
		744 Heartland Trail Madison, WI 53717-1934
		P.O. Box 8923 53708-8923 Phone: 608-831-4444 Fax: 608-831-3334

Levels
(1) 1-63
(2) 1-57-16,18-21,23-25,42
(3) 1-63
(4) 1-63

Logical Names
(1) bdr
(2) bmc
(3) sur
(4) RF3

Reference File:
Ref. File 1 = J:\05130\02\1x17bdr.dgn
Ref. File 2 = J:\05130\02\mill bmc033005.dgn
Ref. File 3 = J:\05130\02\surface mill.dgn
Ref. File 4 = J:\05130\02\bmrrmt.DGN

Plot L
Design File: J:\05130\02\zone_c.plt
fiebrant\Plot Date - Thu Aug 30 09:08:51 2007
Plot File - J:\05130\02\zone_c.plt
Pen Table - K:\CADNET2\TBL\MSV8Default7000_PDF.tbl
Levels On - 1-63



LEGEND



APPROXIMATE EXTENT OF BANK
REWORK & SOIL/RESIDUAL
EXCAVATION



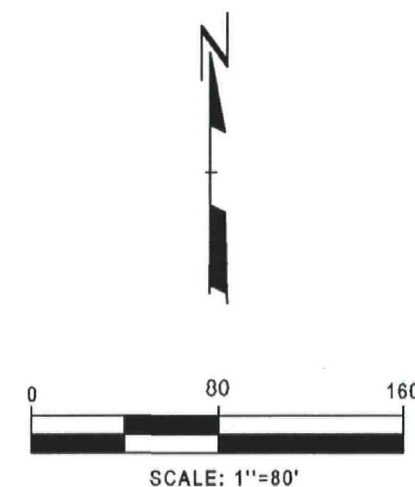
APPROXIMATE EXTENT OF
WORK PLATFORM



UTILITY POLE

NOTE

1. RIP-RAP WILL BE PLACED IN EXCAVATED AREA AS NECESSARY TO STABILIZE BANKS. VOLUME TO BE DETERMINED IN THE FIELD.



PROJECT: **WEYERHAEUSER PLAINWELL MILL BANKS
EMERGENCY RESPONSE PLAN DESIGN REPORT
PLAINWELL, MI**

SHEET TITLE:

ZONE C

DRAWN BY: fiebrant

SCALE:

PROJ. NO.

5130.02

CHECKED BY:

1"=80'

FILE NO.

zone_c.plt

APPROVED BY:

DATE PRINTED:

FIGURE 6

DATE: AUGUST 2007

RMT

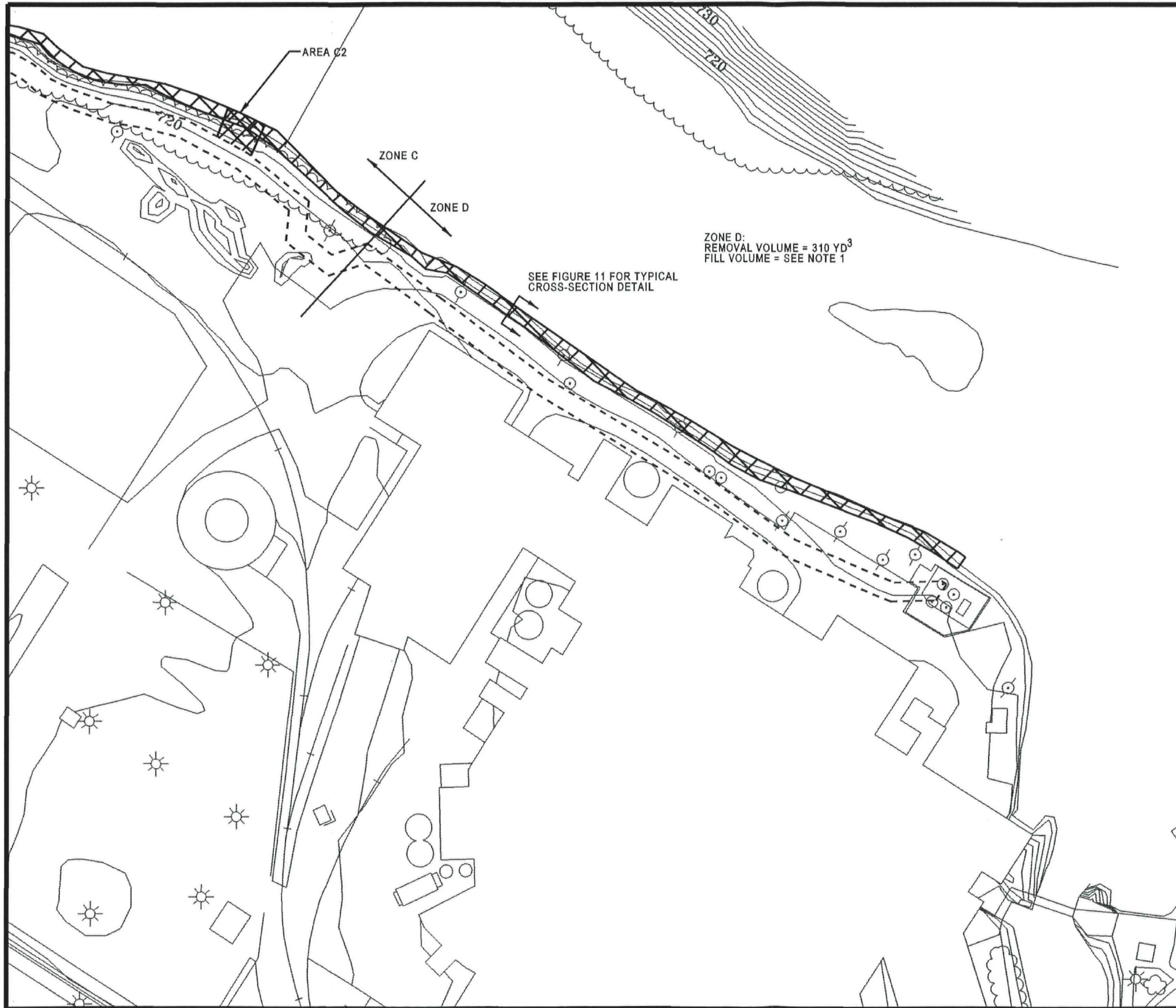
744 Heartland Trail
Madison, WI 53717-1934

P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334



Levels
(1) 1-63
(2) 1-5,7-16,18-21,23-25,42
(3) 1-63
(4) 1-63

Logical Names
Ref. File 1 - J:\05130\02\11x17bdr.dgn
Ref. File 2 - J:\05130\02\mill bmc033005.dgn
Ref. File 3 - J:\05130\02\surface mill.dgn
Ref. File 4 - J:\05130\02\bmrrmt.DGN

Plot L
Design File: J:\05130\02\zone_d.plt
Plot Date: Thu Aug 30 09:09:21 2007
Plot File: J:\05130\02\zone_d.plt
Pen Table: K:\CADNET2\TBL\MSVBDDefault7000_PDF.tbl
Levels On: 1-63

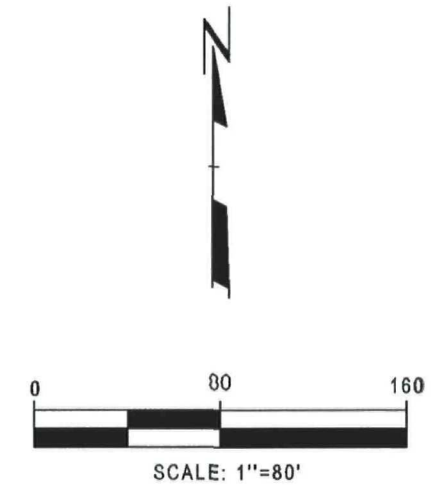


LEGEND

-  APPROXIMATE EXTENT OF BANK REWORK & SOIL/RESIDUAL EXCAVATION
-  APPROXIMATE EXTENT OF WORK PLATFORM
-  UTILITY POLE

NOTE

1. RIP-RAP WILL BE PLACED IN EXCAVATED AREA AS NECESSARY TO STABILIZE BANKS. VOLUME TO BE DETERMINED IN THE FIELD.



PROJECT: **WEYERHAEUSER PLAINWELL MILL BANKS
EMERGENCY RESPONSE PLAN DESIGN REPORT
PLAINWELL, MI**

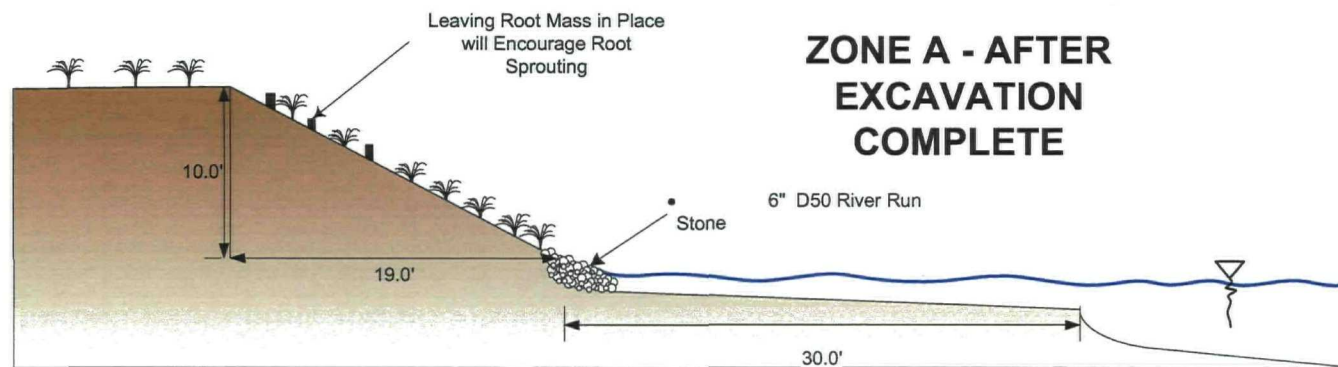
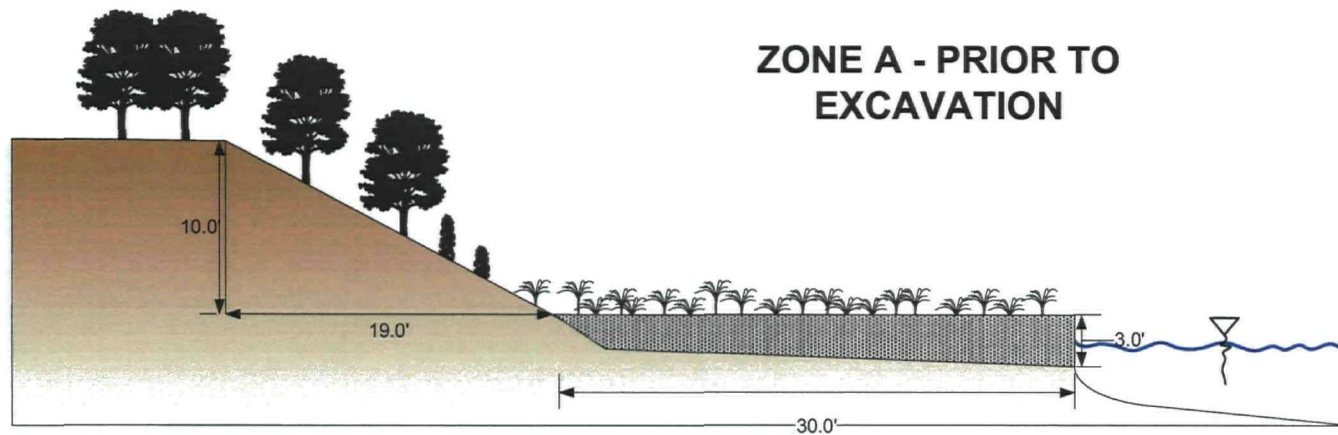
SHEET TITLE:

ZONE D

DRAWN BY: fiebrant	SCALE: 1"=80'	PROJ. NO. 5130.02
CHECKED BY:		FILE NO. zone_d.plt
APPROVED BY:	DATE PRINTED:	FIGURE 7
DATE: January 2008		

RMT

744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334



LEGEND

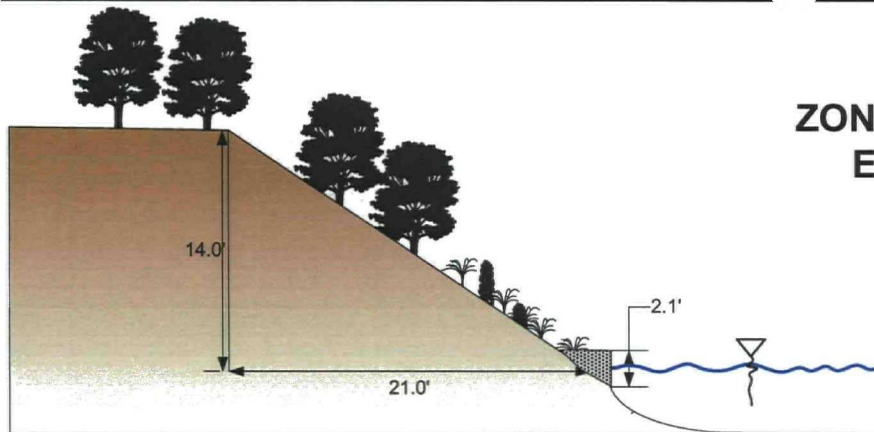
Approximate Residuals Location

PROJECT:			WEYERHAEUSER COMPANY	
			PLAINWELL MILL BANKS EMERGENCY ACTION	
SHEET TITLE:				
CONCEPTUAL DESIGN FOR ZONE A				
BANK RECONFIGURATION				
DATE: JANUARY 2008		FINAL		FIGURE 8
DRAWN BY: NCW				
RMT				

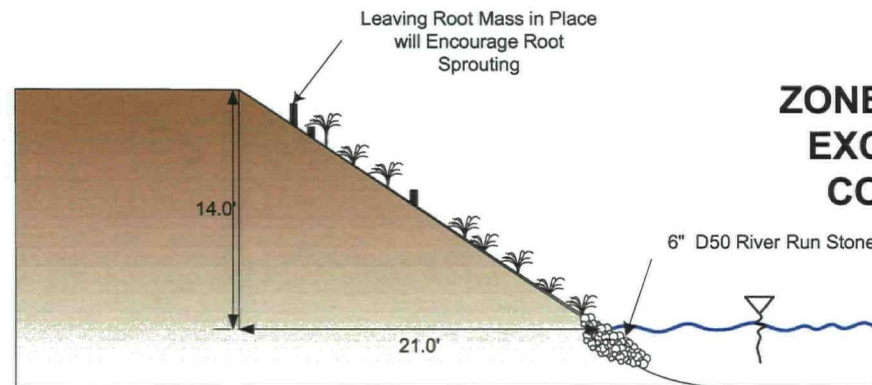
Typical Zone A Cross Section

NOTE:

1. Bank slopes and floodplain width along this reach vary from location to location.
2. Regrade bank slopes as necessary where bank is disturbed.



**ZONE B - PRIOR TO
EXCAVATION**



**ZONE B - AFTER
EXCAVATION
COMPLETE**


LEGEND

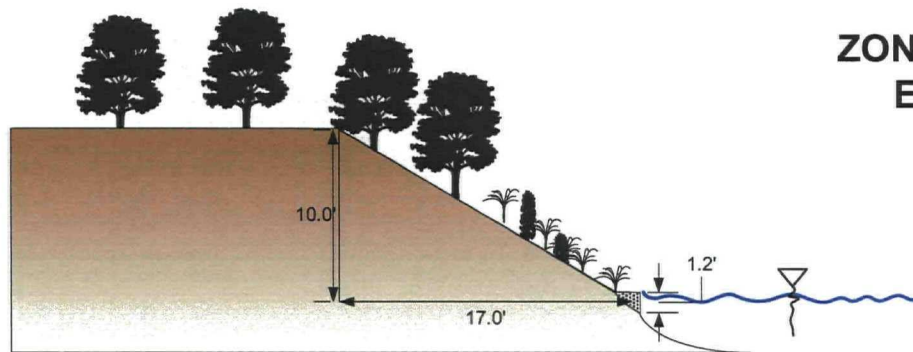
 Approximate Residuals Location

Typical Zone B Cross Section

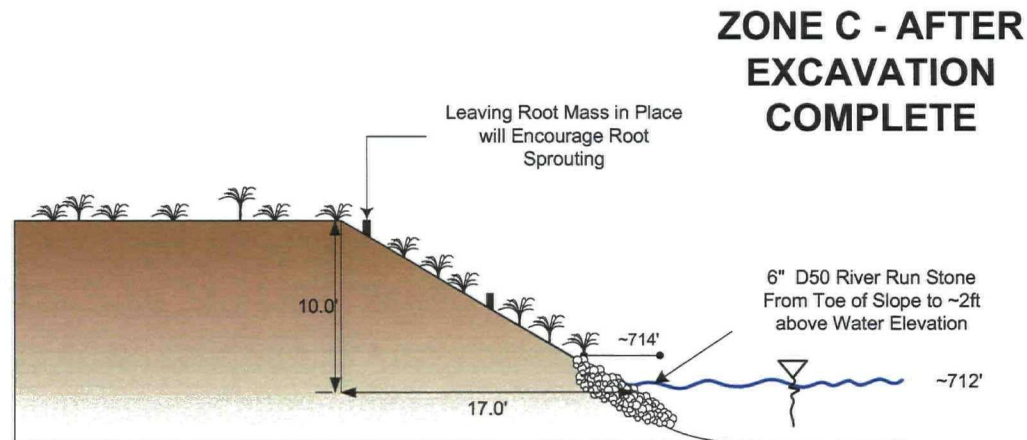
NOTE:

1. Bank slopes vary along this reach from location to location.
2. Regrade bank slopes as necessary where bank is disturbed.
3. Residuals estimated to be from 0 to 4 feet in width.

PROJECT:			WEYERHAEUSER COMPANY PLAINWELL MILL BANKS EMERGENCY ACTION	
SHEET TITLE:				
CONCEPTUAL DESIGN FOR ZONE B BANK RECONFIGURATION				
DATE: JANUARY 2008		FINAL		FIGURE 9
DRAWN BY: NCW				
				



**ZONE C - PRIOR TO
EXCAVATION**



**ZONE C - AFTER
EXCAVATION
COMPLETE**

LEGEND

 Approximate Residuals Location

Typical Zone C Cross Section

NOTE:

1. Bank slopes vary along this reach and may be as steep as a 1:1 slope in certain locations.
2. Regrade bank slopes as necessary where bank is disturbed.
3. Residuals estimated to be from 0 to 4 feet in width.

PROJECT: **WEYERHAEUSER COMPANY
PLAINWELL MILL BANKS EMERGENCY ACTION**

SHEET TITLE: **CONCEPTUAL DESIGN FOR ZONE C
BANK RECONFIGURATION**

DATE: JANUARY 2008

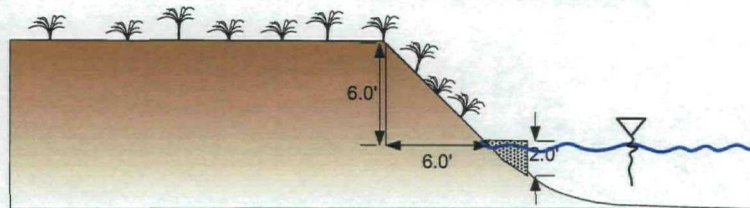
FINAL

DRAWN BY: NCW

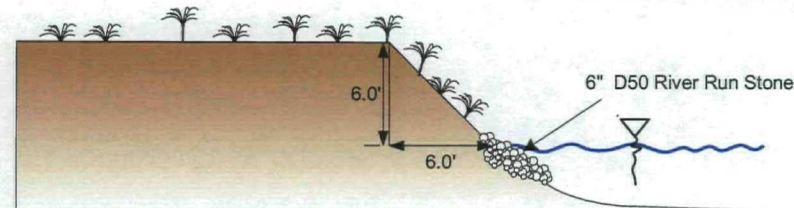
FIGURE 10




ZONE D - PRIOR TO EXCAVATION



ZONE D - AFTER EXCAVATION COMPLETE



LEGEND

 Approximate Residuals Location

Typical Zone D Cross Section

NOTE:

1. Bank slopes vary along this reach from location to location.
2. Regrade bank slopes as necessary where bank is disturbed.
3. Residuals estimated to be from 0 to 4 feet in width.

PROJECT: **WEYERHAEUSER COMPANY
PLAINWELL MILL BANKS EMERGENCY ACTION**

SHEET TITLE: **CONCEPTUAL DESIGN FOR ZONE D
BANK RECONFIGURATION**

DATE: JANUARY 2008

FINAL

DRAWN BY: NCW

FIGURE 11

RMT
®



LEGEND

Total PCBs (mg/kg)


- 0.1 - 1.0
- 1.0 - 4.0
- 4.0 - 50.0
- 50 - 67

NOTES

1. If samples collected at multiple depths, the maximum concentration is presented.



0 50 100 200
 Feet
 1 inch equals 200 feet



PROJECT: WEYERHAEUSER COMPANY KALAMAZOO RIVER SUPERFUND SITE		
SHEET TITLE: SUMMARY OF PCB SAMPLE RESULTS PLAINWELL MILL PROPERTY AND RIVERBANK		
DRAWN BY: WEBER N	SCALE: AS NOTED	PROJ. NO.: 00-05116.02
CHECKED BY:	DATE PRINTED: 6/6/07	FILE NO.: 51160205.mxd
APPROVED BY:	FIGURE 1	
DATE: JUNE 2007	 150 N. Patrick Blvd., Suite 180 Brookfield, WI 53045-5854 Phone: 262-879-1212 Fax: 262-879-1220	





Photographic Log

Client Name: Weyerhaeuser		Site Location: Former Plainwell Mill Banks	Project No.: 5130.02
Photo No. 1	Date 3/29/07		
Description View of the eastern end of Area A looking southeast. Photograph was taken by Nathan Weber.			
Photo No. 2	Date 3/29/07		
Description View of Zone A and Area A (floodplain) looking northwest. Photograph taken by Nathan Weber.			



Photographic Log

Client Name: Weyerhaeuser		Site Location: Former Plainwell Mill Banks	Project No.: 5130.02
Photo No. 3	Date 3/29/07		
Description View of the western end of Area A looking southeast. Photograph taken by Nathan Weber.			
Photo No. 4	Date 3/29/07		
Description View of the eastern end of Area A and the western end of Zone B looking Southeast. Photograph was taken by Nathan Weber.			



Photographic Log

Client Name: Weyerhaeuser	Site Location: Former Plainwell Mill Banks	Project No.: 5130.02
-------------------------------------	--	--------------------------------





Photo No.	Date	
5	3/29/07	
Description View of river banks in Zone B looking North from the top of the bank. Photograph taken by Nathan Weber.		

Photo No.	Date	
6	3/29/07	
Description View of the river banks in Zone C looking southeast. Photograph taken by Nathan Weber.		



Photographic Log

Client Name:		Site Location:	Project No.:
Weyerhaeuser		Former Plainwell Mill Banks	5130.02
Photo No. 7	Date 3/29/07		
Description View of area C1 floodplain looking North from the top of the bank. Photograph taken by Nathan Weber.			
Photo No. 8	Date 3/29/07		
Description View of the area C2 floodplain looking northwest. Photograph taken by Nathan Weber.			



Photographic Log

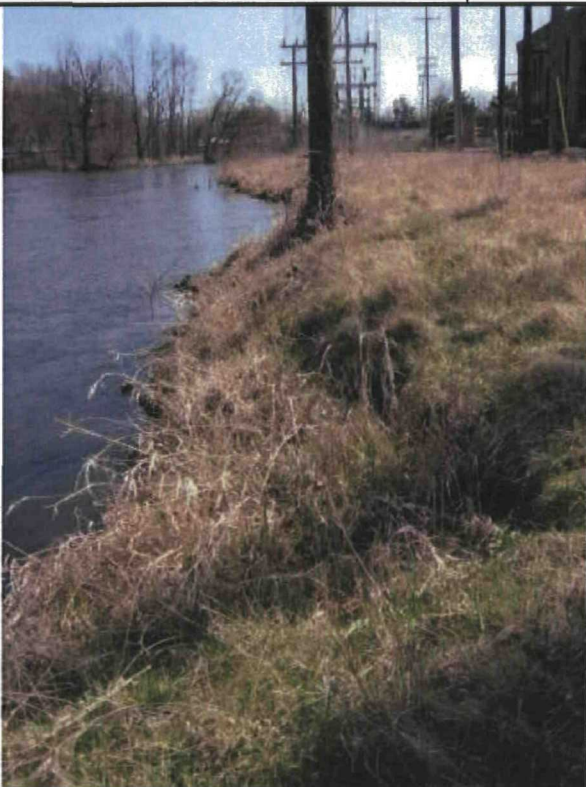
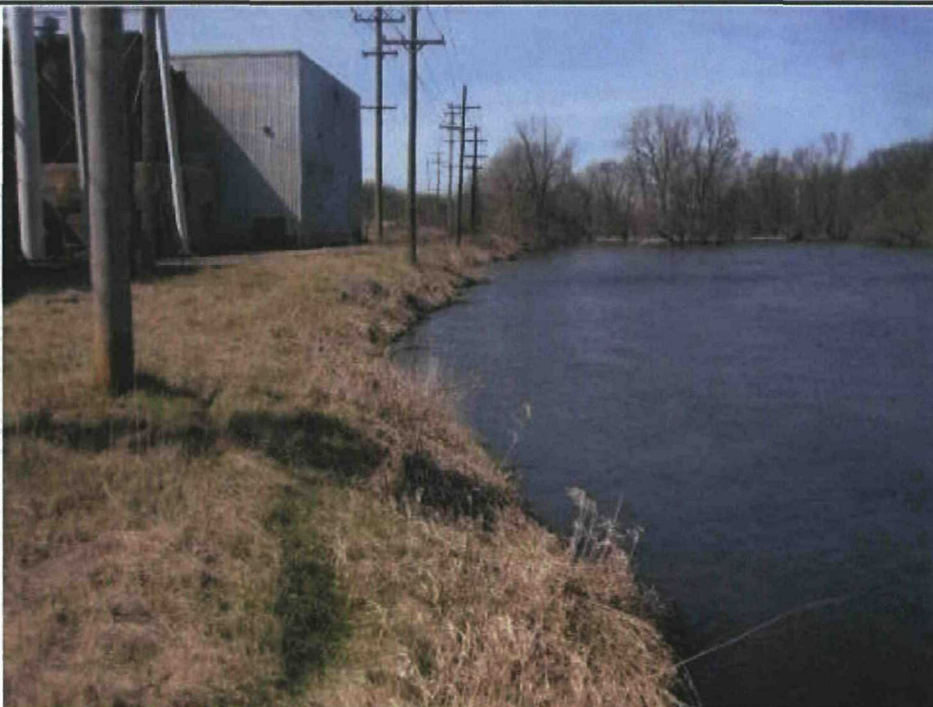
Client Name: Weyerhaeuser		Site Location: Former Plainwell Mill Banks	Project No.: 5130.02
Photo No. 9	Date 3/29/07		
Description View of river banks in Zone D looking Southeast. Photograph taken by Nathan Weber.			

Photo No. 10	Date 3/29/07	
Description View of river banks in Zone D looking west. The building on the left is a part of the former Plainwell Paper mill. Photograph taken by Nathan Weber.		

NPDES Permit Application

Michigan Department of Environmental Quality- Water Bureau
WASTEWATER DISCHARGE PERMIT APPLICATION
 SECTION I - General Information

Section I shall be completed by all permit applicants. See Page iii for instructions on completing Section I, Pages 1 and 2. To submit additional information, see Page ii, Item 3.

Water Bureau Use Only Receipt Number: _____ Permit ID #: _____	Cashier Use Only: 37000-40535-9412-481000-00 <div style="background-color: #cccccc; height: 100px;"></div>
---	--

PLEASE TYPE OR PRINT

1	NPDES PERMIT NUMBER NA				
2. APPLICANT	Applicant Name Kathryn Huibregtse on behalf of Weyerhaeuser Company <hr/> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Address RMT, Inc. <hr/> City Brookfield <hr/> Telephone (with area code) (262) 879-1212 </div> <div style="width: 10%; text-align: center;"> State WI <hr/> ZIP Code 53045 </div> <div style="width: 45%;"> Address 2 or P.O. Box 150 N. Patrick Blvd., Suite 180 <hr/> FAX (with area code) (262) 879-1220 </div> </div>				
3. FACILITY	Facility Name 1 Operable Unit #7 at the Allied Paper/Portage Creek/Kalamazoo River Superfund Site (Former Plainwell Paper Mill) <hr/> Facility Name 2 <hr/> Facility Name 3 <hr/> Street Address (do not use a P.O. Box Number) 200 Allegan Street <hr/> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> City Plainwell <hr/> Telephone (with area code) NA </div> <div style="width: 10%; text-align: center;"> State MI <hr/> ZIP Code 49080 </div> <div style="width: 45%;"> FAX (with area code) NA </div> </div>				
4. CONTACTS	<input checked="" type="checkbox"/> Application Contact <input type="checkbox"/> Facility Contact <input type="checkbox"/> Discharge Monitoring Reports <input type="checkbox"/> Storm Water Billing <input type="checkbox"/> Biosolids Billing <input type="checkbox"/> NPDES Annual Billing	First Name Kathryn <hr/> Title Vice President <hr/> Address 1 150 N. Patrick Blvd., Suite 180 <hr/> City Brookfield <hr/> Telephone (with area code) (262) 879-1212	Last Name Huibregtse <hr/> Business RMT, Inc <hr/> Address 2 <hr/> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> State WI <hr/> ZIP Code 53045 </div> <div style="width: 50%;"> e-mail address kathryn.huibregtse@rmtinc.com </div> </div>		
4. CONTACTS	<input type="checkbox"/> Application Contact <input checked="" type="checkbox"/> Facility Contact <input type="checkbox"/> Discharge Monitoring Reports <input type="checkbox"/> Storm Water Billing <input type="checkbox"/> Biosolids Billing <input type="checkbox"/> NPDES Annual Billing	First Name Jennifer <hr/> Title Field Sampling Coordinator <hr/> Address 1 2025 E. Beltline Ave SE, Suite 402 <hr/> City Grand Rapids <hr/> Telephone (with area code) (616) 975-5414	Last Name Overvoorde <hr/> Business RMT, Inc <hr/> Address 2 <hr/> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> State MI <hr/> ZIP Code 49546 </div> <div style="width: 50%;"> e-mail address jennifer.overvoorde@rmtinc.com </div> </div>		
4. CONTACTS	<input type="checkbox"/> Application Contact <input type="checkbox"/> Facility Contact <input checked="" type="checkbox"/> Discharge Monitoring Reports <input type="checkbox"/> Storm Water Billing <input type="checkbox"/> Biosolids Billing <input type="checkbox"/> NPDES Annual Billing	First Name James <hr/> Title Senior Project Manager <hr/> Address 1 150 N. Patrick Blvd., Suite 180 <hr/> City Brookfield <hr/> Telephone (with area code) (262) 879-1212	Last Name Hutchens <hr/> Business RMT, Inc <hr/> Address 2 <hr/> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> State WI <hr/> ZIP Code 53045 </div> <div style="width: 50%;"> e-mail address james.hutchens@rmtinc.com </div> </div>		

Michigan Department of Environmental Quality Water Bureau
WASTEWATER DISCHARGE PERMIT APPLICATION
SECTION I General Information

PLEASE TYPE OR PRINT

FACILITY NAME Operable Unit #7 at the Allied Paper/Portage Creek/Kalamazoo	NPDES PERMIT NUMBER NA
---	---------------------------

5 PERMIT ACTION REQUESTED (Check one box only) Instructions for this item are on Page iii

☒ **NEW USE** A proposed discharge OR an existing discharge that is currently unpermitted

☐ **REISSUANCE** of current permit

☐ **MODIFICATION** of current permit Attach a description of the proposed modification

Note Applications for **New Use** discharges and applications for either **Reissuance** or **Modification** that include an increased loading of pollutants to the receiving water are required to submit a Rule 98 Demonstration with the Application See Item 6

6 RULE 98 ANTIDEGRADATION REQUIREMENTS Instructions for this item are on Page iii

In accordance with Rule 323 1098 of the Michigan Water Quality Standards the applicant is required to submit an Antidegradation Demonstration for any new or increased loading of pollutants to the surface waters of the state An Antidegradation Demonstration must contain the information specified in Rule 1098 Antidegradation section of the Appendix For assistance completing this item contact the Permits Section

Will this discharge be an increased loading of pollutants to the surface waters of the state?

☐ Yes Submit an Antidegradation Demonstration

☒ No Continue with Item 7

7 ADDITIONAL FACILITY LOCATION INFORMATION Instructions for this item are on Page iii

A Is the treatment facility within municipal boundaries? ☒ Yes ☐ No

B County Allegan	Township Gun Plain
C Town 1N	Range 11W
Section 30	1/4 SE
Latitude 42 26 52	Longitude 85 38 55
Private (French) Land Claim NA	

8 CERTIFIED OPERATOR Does the facility have a DEQ certified operator? ☒ Yes ☐ No Instructions for this item are on Page iii

First Name Provided by contractor		Last Name	
Certification Number		Certification Classification(s)	
Address 1		Address 2	
City		State	Zip Code
Telephone Number	Fax Number	e mail address	

9 OTHER ENVIRONMENTAL PERMITS

Provide the information requested below for any other federal state or local environmental permits in effect or applied for at the time of submittal of this Application form including but not limited to permits issued under any of the following programs Air Pollution Control Hazardous Waste Management Wetlands Protection Soil Erosion and Sedimentation Control and other NPDES permits To submit additional information see Page ii Item 3

Issuing Agency	Permit or COC Number	Permit Type
US Army Corp of Engineers/MDEQ	NA submittal	Joint Permit

Michigan Department of Environmental Quality Water Bureau
WASTEWATER DISCHARGE PERMIT APPLICATION
 SECTION I - General Information

PLEASE TYPE OR PRINT

FACILITY NAME Operable Unit #7 at the Allied Paper/Portage Creek/Kalamazoo				NPDES PERMIT NUMBER NA			
10 WATER FLOW DIAGRAM AND NARRATIVE DESCRIPTION <p>Provide a flow diagram (using 8½ x 11 paper if possible) showing the wastewater flow through the facility (from intake through discharge) including all processes treatment units and bypass piping and include a narrative description that explains the diagram Show all operations contributing wastewater and the locations of flow meters chemical feeds and monitoring and discharge points The water balance shall show the daily average flow rates at the intake and discharge points and approximate daily flow rates between treatment units including influent and treatment rates Use actual measurements whenever available otherwise use the best estimate Show all significant losses of water to products atmosphere and discharge In addition provide a flow diagram for any storm water discharges from secondary structures that are required by state or federal law and for storm water runoff from any Site of Environmental Contamination pursuant to Part 201 of the Michigan Act Do not send blueprints</p> <p>Do the treatment facility processes described above include any lagoons or ponds used for wastewater treatment or storage? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes include the ponds or lagoons in the flow diagram</p> <p>Municipal Facilities Include a narrative that briefly describes the history of the wastewater treatment facility and collection system including the initial construction the facility improvements that have been made future plans for upgrade the location of all constructed emergency overflows and other pertinent information</p> <p>Industrial and Commercial Facilities The line diagram shall include all operations contributing wastewater including process and production areas sanitary flows cooling water and storm water runoff Also include a narrative that provides a brief description of the nature of the business and the manufacturing processes</p> <p>ATTACH THIS INFORMATION TO THIS APPLICATION PLEASE DO NOT BIND THIS INFORMATION</p>							
11 MAP OF FACILITY AND DISCHARGE LOCATION <p>Provide a detailed map on 8½ x 11 paper showing the location of the existing or proposed facility wastewater and biosolid treatment system(s) and wastewater monitoring and discharge points into receiving waters (including bypasses) Include the exact location of the wastewater monitoring and discharge point(s) and all areas through which the discharge flows (e.g. wetlands open drains storm sewers) if applicable between the discharge point and the receiving water If the discharge is to a storm sewer label the storm sewer and show its flow path to the receiving water Also include the location of any water supply intakes or wells and groundwater monitoring wells This map shall be a United States Geological Survey Quadrangle (7 5 minute series) or other map of comparable detail scale and quality (which shows surface water bodies roads bathing beaches and other pertinent landmarks) The minimum area this map shall encompass is approximately one mile beyond the property boundaries.</p> <p>ATTACH THIS INFORMATION TO THIS APPLICATION</p>							
12 CONTRACT LABORATORIES THAT PROVIDE ANALYTICAL SUPPORT <p>Provide the name and address of each contract laboratory or consulting firm that performed any analyses submitted as part of this Application To submit additional information see Page II Item 3</p>							
Laboratory Name NA				Laboratory Name NA			
Street Address				Street Address			
City	State	ZIP Code		City	State	ZIP Code	
Telephone (with area code)		Fax (with area code)		Telephone (with area code)		Fax (with area code)	
Analysis Performed				Analysis Performed			
Laboratory Name NA				Laboratory Name NA			
Street Address				Street Address			
City	State	City	State	City	State	City	State
Telephone (with area code)		Fax (with area code)		Telephone (with area code)		Fax (with area code)	
Analysis Performed				Analysis Performed			

PLEASE TYPE OR PRINT

EQP 4659 A (Rev 1/2006)

Michigan Department of Environmental Quality Water Bureau
WASTEWATER DISCHARGE PERMIT APPLICATION
SECTION I General Information

PLEASE TYPE OR PRINT

FACILITY NAME Operable Unit #7 at the Allied Paper/Portage Creek/Kalamazoo	NPDES PERMIT NUMBER NA
--	----------------------------------

14 STORM WATER DISCHARGES

Facilities that discharge storm water must provide the following information (Please Note The following discharges are also covered by storm water authorization provided they are addressed in the facility's Storm Water Pollution Prevention Plan [SWPPP]) Discharges from fire hydrant flushing potable water sources including water line flushing fire system test water irrigation drainage lawn watering routine building wash down which does not use detergents or other compounds pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used air conditioning condensate springs uncontaminated ground water and foundation or footing drains where flows are not contaminated with process materials such as solvents **Unless otherwise specified answer the following questions**

A Is the storm water from this facility discharged to the waters of the state either directly or through another conveyance? Note If storm water is discharged to a municipal wastewater treatment system or a privately owned activated sludge treatment system check the No box

- ☒ Yes
☐ No Continue with Item 15

B Is the facility identified in this application primarily engaged in an "industrial activity" as defined in 40 CFR 122.26(b)(14)?

- ☐ Yes
☒ No Continue with Item 15

C Are there any industrial activities or materials exposed to storm water at this facility? Storm water discharge requirements may be excluded from an NPDES permit when there are no industrial activities or materials exposed to storm water To qualify the applicant shall certify that the facility has met all the eligibility requirements to claim a condition of no exposure These requirements are found in the No Exposure Certification form in the appendix This form is also available on the DEQ's Internet Page To access the form go to <http://www.michigan.gov/deq> In the left column click on WATER click on Surface Water click on Storm Water in the middle column click on Industrial Program then click on No Exposure Certification

- ☐ Yes
☐ No Complete the No Exposure Certification form and submit it with this application Continue with Item 15

D Does this facility have a current and up-to date SWPPP?

- ☐ Yes
☐ No **Note The applicant must complete this program element to receive storm water discharge authorization**

E Has the facility implemented the nonstructural controls described in the SWPPP?

- ☐ Yes
☐ No **Note The applicant must complete this program element to receive storm water discharge authorization**

F Have all the structural controls described in the SWPPP been constructed and put into operation?

- ☐ Yes
☐ No **Note The applicant must complete this program element to receive storm water discharge authorization**

G Does this facility have a certified industrial storm water operator who supervises the facility's storm water treatment and control measures Included in the Storm Water Pollution Prevention Plan?

- ☐ Yes

Storm Water Operator Name Certification Number
☐ No **Note The applicant must complete this program element to receive storm water discharge authorization**

H Is any of the storm water discharged from (check all that apply)

- ☐ Secondary containment structures that are required by state or federal law On a separate page provide a list the materials that are stored in this area
☐ Areas identified on Michigan's list of Sites of Environmental Contamination pursuant to the Natural Resources and Environmental Protection Act PA 451 of 1994 Part 201 (formerly 307)

I The storm water from this facility discharges to the following receiving water(s) _____

Please note that applicants should provide any sample data taken of the storm water discharge as an attachment. To submit additional information see Page II Item 3

Michigan Department of Environmental Quality Water Bureau
WASTEWATER DISCHARGE PERMIT APPLICATION
SECTION I General Information

PLEASE TYPE OR PRINT

FACILITY NAME Operable Unit #7 at the Allied Paper/Portage Creek/Kalamazoo	NPDES PERMIT NUMBER NA
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15 CERTIFICATION
Rule 323 2114(1-4) promulgated under the Michigan Act requires that this Application be signed as follows

- A For an organization company corporation or authority by a principal executive officer
- B For a partnership by a general partner
- C For a sole proprietor by the proprietor
- D For a municipal state or other public facility by a principal executive officer or ranking elected official (such as the mayor village president city or village manager or clerk)

Note If the signatory is not listed above but is authorized to sign the Application please provide documentation of that authorization

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information the information submitted is to the best of my knowledge and belief true accurate and complete I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for having knowledge of violations

Print Name _____ Title _____

Representing _____

Signature _____ Date _____

This completes Section I Publicly Owned Treatment Works discharging sanitary and industrial wastewater to the surface waters and privately-owned treatment works discharging sanitary wastewater to the surface waters should complete Section II Privately-owned treatment works include, but are not limited to Mobile Home Parks Campgrounds, Condominiums Hotels and Motels Nursing Homes etc All other applicants should complete Section III If assistance is needed completing this Application contact the Permits Section

Permit Application Submittal Checklist

Please confirm the following before submitting the application form

- ☒ 1 Section I has been completed including all diagrams maps and the treatment process narrative
- ☒ 2 The Application has been signed as required above in Section I 15 (A D) or a copy of the letter authorizing the signatory to sign the letter has been included
- ☒ 3 Section II or Section III has been completed including any additional information or submissions
- ☐ 4 A check or Money Order for the appropriate application fee has made out to the State of Michigan and has been included with the application submittal

Michigan Department of Environmental Quality Water Bureau
WASTEWATER DISCHARGE PERMIT APPLICATION
SECTION III Industrial and Commercial Wastewater

Section III is to be completed by all facilities classified as Industrial or Commercial facilities. Industrial and Commercial facilities include but are not limited to facilities that discharge or propose to discharge a wastewater generated by a production process, a service provided, or through a remediation project. Municipal and public facilities are not required to complete Section III (unless requesting authorization for discharges other than sanitary wastewater).

A Facility Information

PLEASE TYPE OR PRINT

FACILITY NAME Operable Unit #7 at the Allied Paper/Portage Creek/Kalamazoo	NPOES PERMIT NUMBER NA
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1 BUSINESS INFORMATION

A Provide up to four Standard Industrial Classification (SIC) or North American Industry Classification System (NAICS) codes in order of economic importance which best describe the major products or services provided by this facility

1 9999	2 NA	3 NA	4 NA
--------	------	------	------

B Indicate if this facility is a primary industry (refer to Table 1 of the Appendix to determine if this facility is a primary industry)

- ☐ Yes This facility is a primary industry. Indicate the primary industry as identified in Table 1 of the Appendix _____
- ☒ No This facility is not a primary industry. Continue with Item C

C Is this facility a Concentrated Animal Feeding Operation (CAFO)?

- ☐ Yes Continue with Section III B 11
- ☒ No Continue with Item 2

2 WATER SUPPLY AND DISCHARGE TYPE

A Identify all water sources entering the facility and treatment systems and provide average flows. The volume may be estimated from water supply meter readings, pump capacities, etc. Provide the name of the source where appropriate (i.e. Grand River, Lake Michigan, City of Millpond). To submit additional information see Page ii Item 3

	Name and Location of Source	Average Volume or Flow Rate	Units
Municipal Supply	City of Plainwell (for equipment decon)	1 800	GPD
Surface Water Intake	NA	NA	
Private Well	NA	NA	
Other	sediment water/precip/decon	4 200	GPD

B Identify water discharged by the facility and treatment systems and provide average flows. If water is first used for one purpose and then is subsequently used for another purpose, indicate the type and amount of the last use. For example, if water is initially used for noncontact cooling water and then for process water, indicate the amount of process water. The amount of water from sources should approximate the amount of water usage. If they are different, provide an explanation.

	Average Flow Rate	Units		Average Flow Rate	Units
Process Wastewater	5 400	GPD	Sanitary Wastewater	NA	NA
Contact Cooling Water	NA	NA	Regulated Storm Water	600	GPD
Noncontact Cooling Water	NA	NA	High Pressure Test Water	NA	NA
Groundwater Clean Up	NA	NA	Other	NA	NA

Note: For A and B above, indicate units as MGD (million gallons per day), MGY (million gallons per year), GPD (gallons per day), or other appropriate unit.

Michigan Department of Environmental Quality Water Bureau
WASTEWATER DISCHARGE PERMIT APPLICATION
SECTION III Industrial and Commercial Wastewater
B Outfall Information

INSTRUCTIONS FOR COMPLETING SECTION III B OUTFALL INFORMATION ITEMS 1 A-J

1 OUTFALL INFORMATION

This item requires detailed information on each outfall at the facility. For this item, outfall refers to the point where treated wastewater is discharged to the surface waters of the state. Surface Waters of the State include the Great Lakes and their connecting waters, all inland lakes, rivers, streams, impoundments, open drains, and other surface bodies of water within the confines of the state. The applicant will need to complete Pages 25 – 31 for each outfall. Fill in the Outfall Number in the top right hand box, identifying the outfall by number, e.g., 001, 002, etc. Applicants with existing NPDES permits should refer to the facility's current NPDES permit for outfall number identification. For each outfall, provide the location, the type of wastewater, the expected and/or measured volume of effluent discharged, the frequency of discharge, and the flow variation of the discharge.

- A Identify the watershed where the outfall is located. See the Upper and Lower Peninsula Hydrologic Maps in the Appendix for the state's watersheds and their Hydrologic Unit Codes (HUC). Then match the HUC code to the watershed name in the associated table of Watershed Names.
- B Identify the receiving water (Waters of the State) to which the facility's outfall(s) discharge.
- C Identify the county and township where the outfall is located.
- D Identify the location of the outfall using State Planar Coordinates (e.g., Town 1N, Range 12E, Section 34, SE 1/4, NE 1/4) or, where applicable, the Private (French) Land Claim designation.
- E Identify the location of the outfall using latitude and longitude accurate to within 15 seconds (e.g., Latitude = 42 27 15, Longitude = 83 02 30) or accurate to within 0.004 decimal degrees (e.g., Latitude = 42.454167, Longitude = 83.041667).
- F Identify the type(s) of wastewater the facility will discharge from this outfall. Check as many types of wastewater as are appropriate. If the water is used in multiple areas, such as water that is first used for noncontact cooling water and then for another use, such as process water, indicate the final use only. For other common wastewater types, see Table 9, Other Types of Wastewater, in the Appendix.
- G When reporting the Maximum Design Flow Rate, identify the design flow for this specific outfall (e.g., batch treatment system flow, package treatment system flow, or some other finite treatment system flow). Please provide an explanation if Pollution Prevention Measures are expected to provide flow reductions.
- H Identify the Maximum Discharge Flow Rate that the facility is expecting to discharge in the next five years. This flow will be used to determine the facility's effluent limitations and will be the flow authorized in an issued permit. NOTE: Discharges of flows greater than the Discharge Flow Rate authorized in the permit will constitute a violation of the Michigan Act and would be subject to the penalties specified therein.
- I A discharge is considered to be seasonal if the facility treats and then stores wastewater throughout the year or a portion of the year and then discharges it a few days, weeks, or months a year. Provide the dates the facility discharges the treated wastewater (e.g., October 15 through November 10) and the average discharge flows (e.g., 5 MGD).
- J A continuous discharge is any discharge that is not a seasonal discharge. Identify the average number of hours per day and the number of days per year that the discharge occurs from this outfall. Batch dischargers are required to provide the peak batch flow rate, the number of batches per day, the per batch minimum, the average and maximum volumes in gallons, and the per batch minimum, average, and maximum batch discharges in minutes.

NOTE The units are as follows: GPD = gallons per day, MGD = millions of gallons per day, MGY = millions of gallons per year.

B Outfall Information

PLEASE TYPE OR PRINT

Michigan Department of Environmental Quality Water Bureau
WASTEWATER DISCHARGE PERMIT APPLICATION
 SECTION III Industrial and Commercial Wastewater
 B Outfall Information

PLEASE TYPE OR PRINT

FACILITY NAME Operable Unit #7 at the Allied Paper/Portage Creek/Kalamazoo	NPDES PERMIT NUMBER NA	OUTFALL NUMBER 001
<p>2 PROCESS STREAMS CONTRIBUTING TO OUTFALL DISCHARGE</p> <p>Federal Regulations require that different industries report different information depending on the type facility. The information below is used to determine the applicable federal regulations for this facility. An abbreviated list is in the Summary of Information to be reported by Industry Type section of the Appendix. Applicants are required to provide the name and the SIC or the NAICS code of each process at the facility. Facilities with production based limits must report an estimated annual production rate for the next five years or the life of the permit. If the wastestream is not regulated under federal categorical standards, the applicant is required to report all pollutants which have the reasonable potential to be present in the discharge. To submit additional information, see Page II, Item 3.</p>		
<p>PROCESS INFORMATION</p> <p>A Name of the process contributing to the discharge: <u>Excavated Sediment Dewatering</u></p> <p>B SIC or NAICS code: <u>9999</u></p> <p>C Describe the process and provide measures of production: Water in excavated soils/sediments will be removed and treated in the on site water treatment system and discharged to the Kalamazoo River. Contaminants having the reasonable potential to be present in the discharge include polychlorinated biphenyls (PCBs) and total suspended solids (TSS).</p>		
<p>PROCESS INFORMATION</p> <p>A Name of the process contributing to the discharge: <u>Stormwater and Decon water</u></p> <p>B SIC or NAICS code: <u>9999</u></p> <p>C Describe the process and provide measures of production: Collected storm water and spent wash water will be treated in the on site water treatment system and discharged to the Kalamazoo River. Contaminants having the reasonable potential to be present in the discharge include polychlorinated biphenyls (PCBs) and total suspended solids (TSS).</p>		
<p>PROCESS INFORMATION</p> <p>A Name of the process contributing to the discharge: _____</p> <p>B SIC or NAICS code: _____</p> <p>C Describe the process and provide measures of production:</p>		
<p>PROCESS INFORMATION</p> <p>A Name of the process contributing to the discharge: _____</p> <p>B SIC or NAICS code: _____</p> <p>C Describe the process and provide measures of production:</p>		
<p>PROCESS INFORMATION</p> <p>A Name of the process contributing to the discharge: _____</p> <p>B SIC or NAICS code: _____</p> <p>C Describe the process and provide measures of production:</p>		

Michigan Department of Environmental Quality Water Bureau
WASTEWATER DISCHARGE PERMIT APPLICATION
SECTION III Industrial and Commercial Wastewater
B Outfall Information

INSTRUCTIONS FOR COMPLETING SECTION III-B: OUTFALL INFORMATION, ITEM B-3

In accordance with 40 CFR 122.21 all applicants are required to report CBOD₅ Chemical Oxygen Demand Total Organic Carbon Total Suspended Solids Ammonia as N Temperature (both summer and winter) and pH. The applicant may however request that reporting of data for one or more of these required parameters be waived. Such requests shall be supported by adequate rationale. The request shall be included as an attachment to this Application.

Report available discharge data for the parameters listed in Section III B 3 of this Application. Actual data shall be provided for existing discharges and expected or estimated data provided for proposed discharges. Please include an explanation if Pollution Prevention Measures are expected to reduce pollutants. Certain types of discharges shall provide a minimum of analytical test data for specific parameters. See *Minimum Analytical Testing Requirements for Various Discharge Requests* in the Appendix for a list of specific discharge types and their specific parameters (e.g. noncontact cooling waters, petroleum groundwater cleanups, etc.). For assistance in determining the appropriate parameters to report, contact the Permits Section. Data for other conventional parameters not listed in Section III B 3 can be reported on the blank spaces provided. To submit additional information, see Page II, item 3.

Report all data in the units provided and for the sample types specified in the table. If more than one option is available, check the appropriate box. The units are as follows: µg/l = micrograms per liter, mg/l = milligrams per liter, F = degrees Fahrenheit, C = degrees Celsius. **For analytical test requirements, see Page II, Item 5.**

To analyze for pH, temperature, total residual chlorine, oil and grease, and fecal coliform, use **Grab Samples** unless other frequency sample type analyses are available. To analyze for total BOD₅, total phosphorus, COD, TOC, ammonia nitrogen, and total suspended solids, use **24-hour composite samples** unless other frequency sample type analyses are available.

For two or more substantially identical outfalls, permission may be requested from the appropriate district office to sample and analyze only one outfall and submit the results of the analysis for other substantially identical outfalls. If the request is granted by the district office, on a separate sheet attached to the Application, identify which outfall was sampled and describe why the outfalls which were not sampled are substantially identical to the outfall which was sampled. See the Appendix, Definitions, Section for sampling definitions including maximum daily concentration and maximum monthly concentration.

REPORTING OF INTAKE DATA

Applicants attempting to demonstrate eligibility for "net" effluent limitations for one or more pollutants are required to report intake water data. A "net" effluent limitation is determined by subtracting the average level of the pollutant(s) present in the intake waters from the average level of the pollutant(s) remaining after treatment. NPDES regulations allow net limitations only in certain circumstances (see 40 CFR Part 122.45(g)). To demonstrate eligibility, report the average concentration and/or mass of the results of the analyses on the intake water. If the intake water is treated prior to use, report the intake concentrations and/or mass after treatment. In addition to the analytical results, the following information shall be submitted for each parameter:

- a) A statement that the intake water is drawn from the body of water into which the discharge is made. If the discharge is not to the same body of water from which the water is withdrawn, the facility is not eligible for net limitations.
- b) A statement of the extent to which the level of the pollutant in the intake water is reduced by treatment of the wastewater. Limitations for the net removal of pollutants are adjusted only to the extent that the pollutant is not removed.
- c) When applicable (for example, when the pollutant represents a class of compounds, e.g. BOD₅, TSS, etc.), a demonstration of the extent to which the pollutants in the intake vary physically, chemically, and biologically from the pollutants contained in the discharge. Limitations are adjusted only to the extent that the concentrations of the intake pollutants vary from the discharged pollutants.

Note: Applicants for groundwater remediation discharges should also report the intake characteristics of the contaminated groundwater.

Michigan Department of Environmental Quality Water Bureau
WASTEWATER DISCHARGE PERMIT APPLICATION
 SECTION III Industrial and Commercial Wastewater
 B Outfall Information

PLEASE TYPE OR PRINT

FACILITY NAME Operable Unit #7 at the Allied Paper/Portage Creek/Kalamazoo	NPDES PERMIT NUMBER NA	OUTFALL NUMBER 001
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3 EFFLUENT CHARACTERISTICS CONVENTIONAL POLLUTANTS Instructions for this item are on Page 26
Existing facilities are required to report data from effluent analysis for the parameters listed below **For analytical test requirements or if alternate test procedures for any parameter listed below have been approved see Page II Item 5**
New facilities are required to provide estimated effluent concentrations for the parameters listed below (See the Definition Section in the Appendix for sampling definitions including maximum daily concentration and maximum monthly concentration)

☐ Check this box if additional information is included as an attachment To submit additional information see Page II Item 3

Please Note Rule 323 1062 allows the use of either Escherichia Coliform Bacteria or Fecal Coliform Bacteria as an indicator that effluent has been disinfected The Department will use the indicator selected below in the permit issued based on this Application

☐ Use Escherichia Coliform Bacteria as an indicator of disinfection

☐ Use Fecal Coliform Bacteria as an indicator of disinfection

Parameter	Maximum Monthly Concentration	Maximum Daily Concentration	Units	Number of Analyses	Sample Type
Biochemical Oxygen Demand – five day (BOD ₅)			mg/l		<input type="checkbox"/> Grab <input type="checkbox"/> 24 Hr Comp
Chemical oxygen demand (COD)			mg/l		<input type="checkbox"/> Grab <input type="checkbox"/> 24 Hr Comp
Total organic carbon (TOC)			mg/l		<input type="checkbox"/> Grab <input type="checkbox"/> 24 Hr Comp
Ammonia Nitrogen (as N)			mg/l		<input type="checkbox"/> Grab <input type="checkbox"/> 24 Hr Comp
Total Suspended Solids	30	45	mg/l		<input checked="" type="checkbox"/> Grab <input type="checkbox"/> 24 Hr Comp
Total Dissolved Solids			mg/l		<input type="checkbox"/> Grab <input type="checkbox"/> 24 Hr Comp
Total Phosphorus (as P)			mg/l		<input type="checkbox"/> Grab <input type="checkbox"/> 24 Hr Comp
Fecal Coliform Bacteria (report geometric means)		maximum 7-day	counts/100ml		Grab
Escherichia Coliform Bacteria (report geometric means)		maximum 7 day	counts/100 ml		Grab
Total Residual Chlorine			<input type="checkbox"/> mg/l <input type="checkbox"/> µg/l		Grab
Dissolved Oxygen	Do Not Use	minimum daily	mg/l		<input type="checkbox"/> Grab <input type="checkbox"/> 24 Hr Comp
pH (report maximum and minimum of individual samples)	minimum	maximum	standard units		<input type="checkbox"/> Grab <input type="checkbox"/> 24 Hr Comp
Temperature Summer			<input type="checkbox"/> F <input type="checkbox"/> C		<input type="checkbox"/> Grab <input type="checkbox"/> 24 Hr Comp
Temperature Winter			<input type="checkbox"/> F <input type="checkbox"/> C		<input type="checkbox"/> Grab <input type="checkbox"/> 24 Hr Comp
Oil & Grease			mg/l		Grab
polychlorinated biphenyls (PCBs)	0.000026	NA	ug/L		<input checked="" type="checkbox"/> Grab <input type="checkbox"/> 24 Hr Comp
					<input type="checkbox"/> Grab <input type="checkbox"/> 24 Hr Comp
					<input type="checkbox"/> Grab <input type="checkbox"/> 24 Hr Comp

Michigan Department of Environmental Quality Water Bureau
WASTEWATER DISCHARGE PERMIT APPLICATION
 SECTION III Industrial and Commercial Wastewater
 B Outfall Information

PLEASE TYPE OR PRINT

FACILITY NAME Operable Unit #7 at the Allied Paper/Portage Creek/Kalamazoo	NPDES PERMIT NUMBER NA	OUTFALL NUMBER 001
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Note For questions on this page Tables 1-5 are found in the Appendix

4 PRIMARY INDUSTRY PRIORITY POLLUTANT INFORMATION

Existing primary industries that discharge process wastewater are required to submit the results of at least one effluent analysis for selected organic pollutants identified in Table 2 (as determined from Table 1 Testing Requirements for Organic Toxic Pollutants by Industrial Category) and all of the pollutants identified in Table 3. Existing primary industries are required to also provide the results of at least one effluent analysis for any other chemical listed in Table 2 known or believed to be present in facility effluent.

In addition, submit the results of all other effluent analyses performed within the last five years for any chemical listed in Tables 2 and 3.

New primary industries that propose to discharge process wastewater are required to provide an estimated effluent concentration for any chemical listed in Tables 2 and 3 expected to be present in facility effluent.

5 DIOXIN AND FURAN CONGENER INFORMATION

Existing industries that use or manufacture 2,3,5 trichlorophenoxy acetic acid (2,4,5-T), 2, (2,3,5-trichlorophenoxy) propanoic acid (Silvex), 2,3,5 TP, 2, (2,4,5 trichlorophenoxy) ethyl, 2,2-dichloropropionate (Erbon), 0,0 dimethyl 0-(2,4,5-trichlorophenyl) phosphorothionate (Ronnel), 2,4,5 trichlorophenol (TCP) or hexachlorophene (HCP) or knows or has reason to believe that 2,3,7,8 Tetrachlorodibenzo-p-dioxin (TCDD) is present in facility effluent are required to submit the results of at least one effluent analysis for the dioxin and furan congeners listed in Table 6. All effluent analyses for dioxin and furan congeners shall be conducted using EPA Method 1613.

In addition, submit the results of all other effluent analyses performed within the last five years for any dioxin and furan congener listed in Table 6.

New Industries that expect to use or manufacture 2,3,5 trichlorophenoxy acetic acid (2,4,5-T), 2, (2,3,5 trichlorophenoxy) propanoic acid (Silvex), 2,3,5 TP, 2, (2,4,5-trichlorophenoxy) ethyl, 2,2 dichloropropionate (Erbon), 0,0 dimethyl 0-(2,4,5 trichlorophenyl) phosphorothionate (Ronnel), 2,4,5 trichlorophenol (TCP) or hexachlorophene (HCP) or knows or has reason to believe that 2,3,7,8 Tetrachlorodibenzo-p-dioxin (TCDD) is present in facility effluent shall provide estimated effluent concentrations for the dioxin and furan congeners listed in Table 6.

6 OTHER INDUSTRY PRIORITY POLLUTANT INFORMATION

Existing secondary industries or existing primary industries that discharge non process wastewater are required to submit the results of at least one effluent analysis for any chemical listed in Tables 2 and 3 known or believed to be present in facility effluent.

In addition, submit the results of all other effluent analyses performed within the last five years for any chemical listed in Tables 2 and 3.

New secondary industries or new primary industries that propose to discharge non process wastewater are required to provide an estimated effluent concentration for any chemical listed in Tables 2 and 3 expected to be present in facility effluent.

7 ADDITIONAL TOXIC AND OTHER POLLUTANT INFORMATION

All existing industries regardless of discharge type are required to provide the results of at least one analysis for any chemical listed in Table 4 known or believed to be present in facility effluent and a measured or estimated effluent concentration for any chemical listed in Table 5 known or believed to be present in facility effluent. In addition, submit the results of any effluent analysis performed within the last five years for any chemical listed in Tables 4 and 5.

New Industries regardless of discharge type are required to provide an estimated effluent concentration for any chemical listed in Tables 4 and 5 expected to be present in facility effluent.

8 INJURIOUS CHEMICALS NOT PREVIOUSLY REPORTED

New or existing industries regardless of discharge type are required to provide a measured or estimated effluent concentration for any toxic or otherwise injurious chemicals known or believed to be present in facility effluent that have not been previously identified in this Application. Quantitative effluent data that are less than five years old for these chemicals shall be reported.

NOTE: All effluent data submitted in response to questions 4, 5, 6, 7, and 8 above should be recorded on Page 30. To submit additional information see Page ii Item 3. If the effluent concentrations are estimated place an E in the Analytical Method column. The following fields shall be completed for each data row: Parameter, CAS No., Concentration(s), Sample Type, Analytical Method, Quantification Level, and Detection Level. For analytical test requirements see Page ii Item 5.

If Alternate Test Procedures have been approved for any parameter listed above (Items 4 through 8) see Page ii Item 5 for additional instructions.

PLEASE TYPE OR PRINT

EQP 4659 C (Rev 1/2006)

Michigan Department of Environmental Quality Water Bureau
WASTEWATER DISCHARGE PERMIT APPLICATION
 SECTION III Industrial and Commercial Wastewater

B Outfall Information

PLEASE TYPE OR PRINT

FACILITY NAME Operable Unit #7 at the Allied Paper/Portage Creek/Kalamazoo	NPDES PERMIT NUMBER NA	OUTFALL NUMBER 001
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9 WATER TREATMENT ADDITIVES

Water treatment additives include any material that is added to water used at the facility or to wastewater generated by the facility to condition or treat the water

Approvals of water treatment additives are authorized by the DEQ under separate correspondence. The issuance of an NPDES permit does not constitute approval of the water treatment additives that are included in this Application

A Are there water treatment additives in the discharge from this facility?

☐ Yes

☒ No Proceed to Question 10

B Have these water treatment additives been previously approved?

☐ Yes Submit a list of the previously approved water treatment additives and the date on which they were approved. The information listed in Item C Items 1-8 shall be updated if it has changed since the previous approval

☐ No Continue with Item C

C Submit a list of water treatment additives that are or may be discharged from the facility. Applicants are required to submit the information listed below for each additive

- 1 The water treatment additive Material Safety Data Sheet
- 2 The proposed water treatment additive discharge concentration
- 3 The discharge frequency (i.e. number of hours per day, week, etc.)
- 4 The outfall from which the water treatment additive is to be discharged
- 5 The type of removal treatment, if any, that the water treatment additive receives prior to discharge
- 6 The water treatment additive function (i.e. microbiocide, flocculant, etc.)
- 7 A 48-hour LC50 or EC50 for a North American freshwater planktonic crustacean (either *Ceriodaphnia* sp., *Daphnia* sp., or *Simocephalus* sp.)
- 8 The results of a toxicity test for one other North American freshwater aquatic species (other than a planktonic crustacean) that meets a minimum requirement of Rule 323.1057(2)(a) of the Water Quality Standards. Examples of tests that would meet this requirement include a 96-hour LC50 for rainbow trout, bluegill, or fathead minnow.

The required toxicity information (described in Items 7 and 8 above) is currently available in the Water Bureau files for the water treatment additives listed on the DEQ's Internet page. To access that information, go to <http://www.michigan.gov/deq>, click on "Site Map" at the bottom of the right column under "Water Quality Monitoring", click on "Assessment of Michigan Waters". Under the "Information" heading, click on the "Water Treatment Additive List". If you intend to use one of the water treatment additives on this list, only the information in Items 1 through 6 above needs to be submitted to the WD.

Note: The availability of toxicity information for a water treatment additive does not constitute approval to discharge the water treatment additive.

10 WHOLE EFFLUENT TOXICITY TESTS

Have any acute or chronic WET tests been conducted on any discharges or receiving water(s) in relation to facility discharges within the last three years? If yes, identify the tests and summarize the results on a separate sheet, unless the test has been submitted to the DEQ in the last five years. For assistance in WET testing, see "Whole Effluent Toxicity Test Guidance and Requirements" in the Appendix.

11 COMPREHENSIVE ANIMAL FEEDING OPERATION (CAFO) INFORMATION To be completed by CAFO's only

The applicant shall provide specific information about the number and type of animals and type of housing. The type of containment and storage and total capacity for CAFO waste storage. CAFO waste storage structure design. The total number of acres under control of the applicant available for land application of CAFO waste. Estimated amounts of CAFO waste generated per year. Estimated amounts of CAFO waste transferred to other persons per year. A list and map(s) showing the location of all land application fields. All potential receiving waters for both the production area and all land application areas. For additional information, see "CAFO Guidance and Requirements" in the Appendix.

This completes Section III. Return the completed Application (Sections I and III, and any attachments) to one of the addresses on Page II of this Application. If assistance is needed to complete this Application, contact the Permits Section.

Attachment 1

Section 1, Item 6 Rule 98 -- Antidegradation Requirements

Rule 323 1098 of the Michigan Water Quality Standards requires applicants to submit an Antidegradation Demonstration for any new or increased loading of pollutants to the surface waters of the State

RMT, Inc on behalf of Weyerhaeuser Company is requesting an exemption from Rule 323 1098 because the excavation of contaminated soil from the former Plainwell Paper Mill banks along the Kalamazoo River are, in accordance with subrule (8)(c) response actions undertaken to alleviate a release of pollutants into the environment that may pose an imminent and substantial danger to the public health or welfare under (1) The comprehensive environmental response compensation and liability act of 1980, (CERCLA), as amended 42 U S C §9601 et seq

Attachment 2

Section 1, Item 10 Water Flow Diagram and Narrative Description

Wastewater Treatment System

Wastewater Sources

Wastewater will be generated during Emergency Response activities being performed on the former Plainwell Paper Mill banks along the Kalamazoo River. There are four sources of wastewater that will comprise the influent streams to the treatment system:

- Drainage water from saturated residuals and soil excavated during the Emergency response activities
- Run on precipitation that accumulates on the containment pads
- Wastewater system backwash and rinse fluids
- Construction and sampling equipment decontamination water

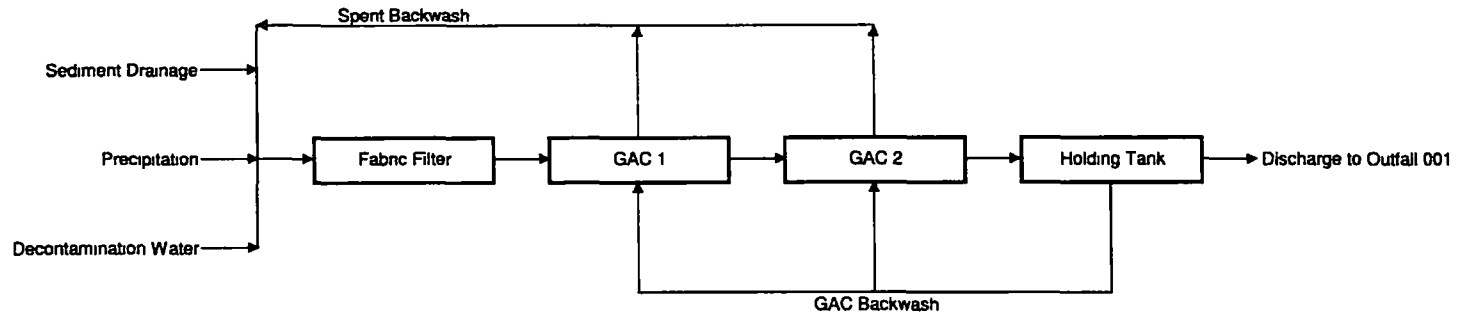
The excavation design includes clearing and grubbing the excavation areas and placing silt curtains in the river along the banks. The majority of the targeted residuals are expected to be saturated. These saturated residuals will be removed and placed in an on site containment pad where water will gravity drain. This drainage water will be collected and pumped to the on site wastewater treatment system. After dewatering, the residuals will be loaded into trucks and transported to a to be determined landfill. Before leaving the site, these trucks and all other equipment that comes in contact with residuals will be decontaminated using a power washer. Decontamination water will be collected and pumped to the on site wastewater treatment system. Additional wastewater sources include any precipitation that falls on the containment pad and the water that is used to backwash the carbon adsorption columns.

Description of the Treatment System

The proposed treatment train consists of fabric filtration and carbon adsorption polishing (See the process flow diagram Section III B Item 3). The trailer mounted treatment system is designed to handle up to 25 gpm of influent flow.

The treatment system will consist of two parallel bag filters followed by two back washable carbon columns in series each containing 800 pounds of granular activated carbon. Treated water will be discharged directly to Outfall 001 (see Map). Some treated water will be contained on site for use as backwash and decontamination wash water.

Item 10 WTP Flow Diagram



Sediment Drainage						
Flow (gpd)	3600					
TSS (mg/L)	100					
Precipitation						
Flow (gpd)	600					
TSS (mg/L)	20					
Decon Water						
Flow (gpd)	1800					
TSS (mg/L)	200					
Spent Filter Wash						
Flow (gpd)	200					
TSS (mg/L)	200					
		Total Influent	Fabnc Filter Effluent	GAC 1 Effluent	GAC 2 Effluent	Discharge to Outfall 001
		6200	6200	6200	6200	6000
		125	12.5	0.623	0.062	0.062
						GAC Backwash
						200
						0.062

Attachment 3

Section 1 Item 13 – List of Adjacent Property Owners

Public notification are being handled by the United States Environmental Protection Agency (USEPA) in conjunction with the City of Plainwell. The following is a general list of adjacent property owners

Name	Address	City	State	Zip Code
Residential/Commerical	551 to 101 Allegan	Plainwell	MI	49080
Residential	110 to 140 Michigan Ave	Plainwell	MI	49080
Residential	111 to 161 Prospect St	Plainwell	MI	49080

Attachment 4

Section III B Item 3 Effluent Characteristics – Conventional Pollutants

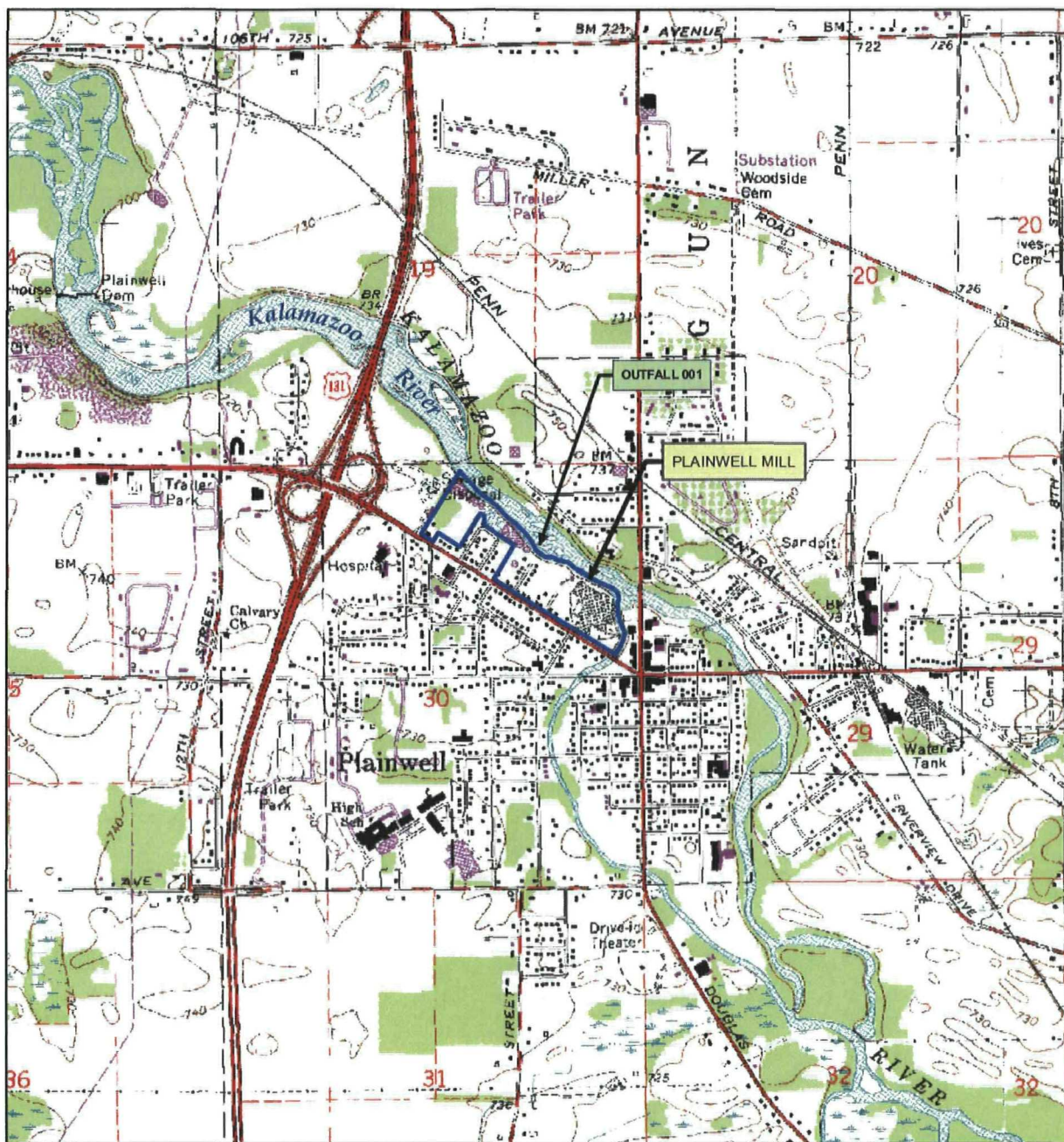
Discharge monitoring will involve tracking the concentrations of polychlorinated biphenyls (PCBs) and total suspended solids (TSS). PCBs will be monitored because it is the contaminant of concern at the Kalamazoo River Superfund site. TSS will be monitored because PCBs will tend to be associated with solids in the water column due to their hydrophobic nature.

A waiver is requested for all other compounds and parameters other than PCBs and TSS. Excluding PCBs and TSS, the sediment removed during the remedial activities is not expected to contain or contribute additional pollutants to the Kalamazoo River.

Attachment 5

Section III B, Items 4-8 and 10

The analytical results of the investigations in the powerhouse discharge channel by CDM in 2001, Weston in 2002 and EPA in 2003 indicate that PCBs are the primary chemical of concern in this area. Additionally, the findings of the remedial investigation, and human health and ecological risk assessments for the entire Allied Paper, Inc/Portage Creek/Kalamazoo River Superfund Site confirm that PCBs is the primary chemical of concern for the Kalamazoo River



LEGEND

— PROPERTY BOUNDARIES



0 1,000 2,000 4,000
FEET

1 INCH EQUALS 2,000 FEET
1:24,000



PROJECT LOCATION

BASE MAP FROM USGS 7.5 MINUTE QUADRANGLE, OSTEGO, 1967, REVISED 1973.



744 Heartland Trail
Madison, WI 53717 - 1934
P.O. Box 8923
Madison, WI 53708 - 8923
Phone: 608-831-4444
Fax: 608-831-3021

SITE LOCATION MAP

PLAINWELL MILL BANKS EMERGENCY ACTION
PLAINWELL MILL
PLAINWELL, MICHIGAN

DRAWN BY: PYLKASE

APPROVED BY:

PROJ. NO.: 00-05130.03

FILE NO.: 51300301

DATE: AUGUST 2007

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fiebant\Plot Date: Thu Aug 30 09:09:15 2007
Plot File: J:\5130\02\siteplan.prp
Pen Table: K:\CADNET2\TBL\MSV8Default7000_PDF.tbl
Levels On: 1-63

Reference Files
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Ref. File 2: J:\5130\02\bmrrmt.DGN
Ref. File 3: J:\5130\02\surface mill.dgn
Ref. File 4: J:\5130\02\1x17bdr.dgn

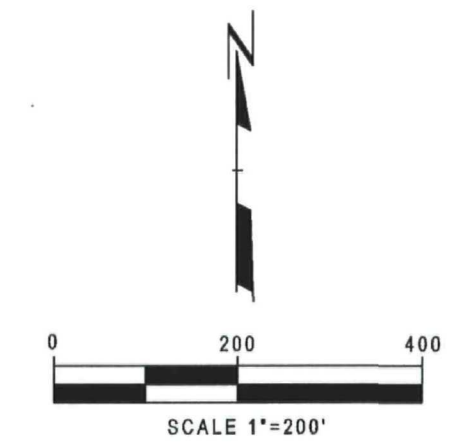
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(2) bmr
(3) RF2
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Levels
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(2) 1-63
(3) 1-63
(4) 1-63



LEGEND

APPROXIMATE EXTENT OF EMERGENCY ACTION
(SEE FIGURES 4-7 FOR ZONE DETAILS)



PROJECT: **WEYERHAEUSER PLAINWELL MILL BANKS
EMERGENCY RESPONSE PLAN DESIGN REPORT
PLAINWELL, MI**

SHEET TITLE: **PROJECT SITE PLAN**

DRAWN BY: fiebrant	SCALE: 1"=200'	PROJ. NO. 5130.02
CHECKED BY:	DATE PRINTED:	FILE NO. siteplan.plt
APPROVED BY:		FIGURE 3
DATE: January 2008		

RMT.

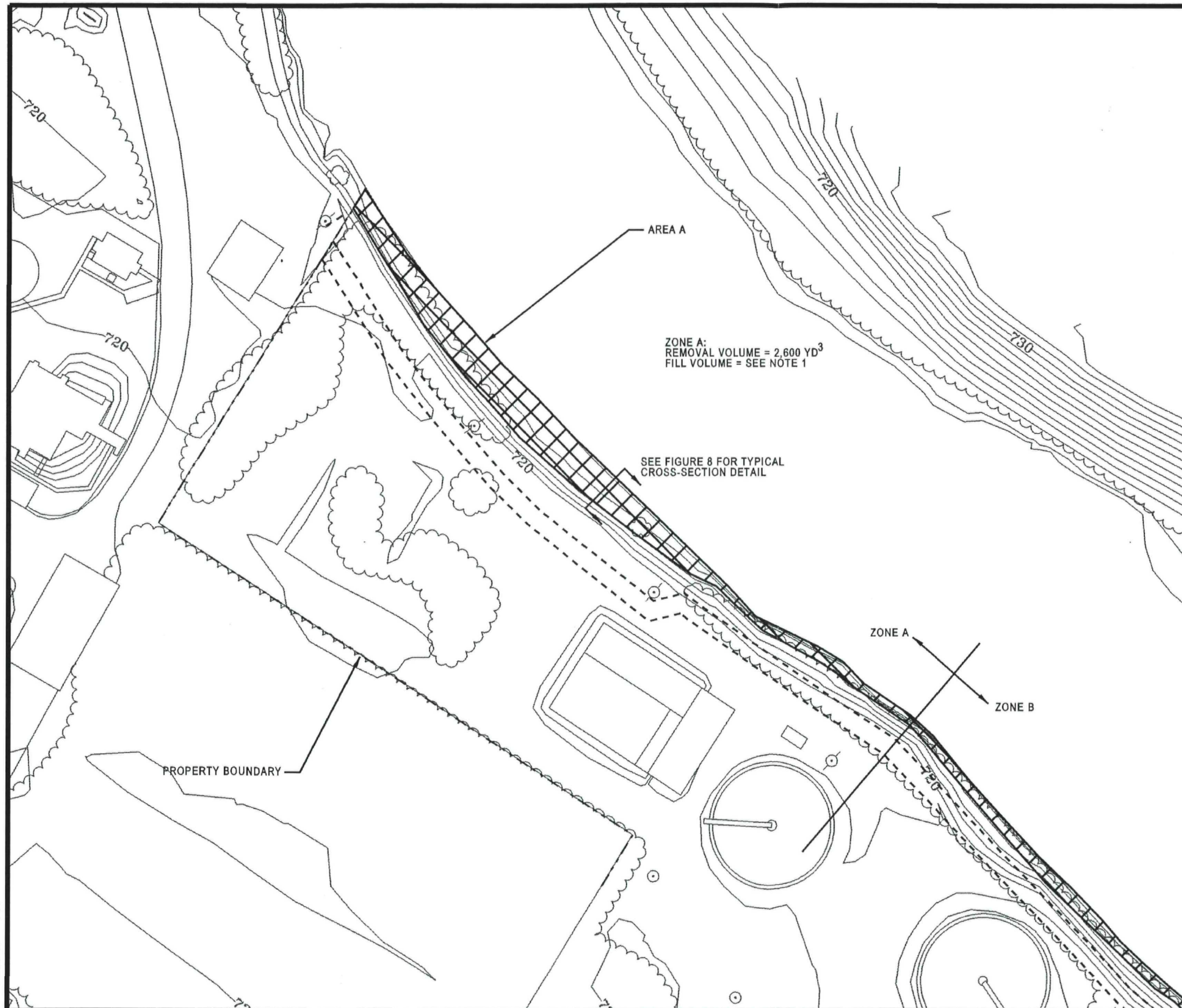
744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

Levels
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(4) 1-63

Logical Names
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(2) sur
(3) RE2
(4) bdr

Reference Files
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Ref. File 2 - J:\05130\02\surface mill.dgn
Ref. File 3 - J:\05130\02\bmrrmt.dgn
Ref. File 4 - J:\05130\02\1x17bdr.dgn

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Levels On - 1-63



LEGEND



APPROXIMATE EXTENT OF BANK
REWORK & SOIL/RESIDUAL
EXCAVATION



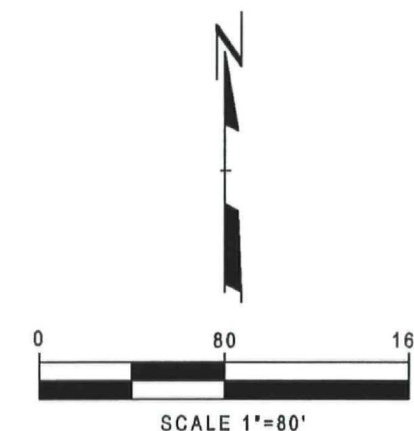
APPROXIMATE EXTENT OF
WORK PLATFORM



UTILITY POLE

NOTE

1. RIP-RAP WILL BE PLACED IN EXCAVATED AREA AS NECESSARY TO STABILIZE BANKS. VOLUME TO BE DETERMINED IN THE FIELD.



PROJECT: **WEYERHAEUSER PLAINWELL MILL BANKS
EMERGENCY RESPONSE PLAN DESIGN REPORT
PLAINWELL, MI**

SHEET TITLE:

ZONE A

DRAWN BY: friebrant	SCALE: 1"=80'	PROJ. NO. 5130.02
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APPROVED BY:	DATE PRINTED:	FIGURE 4
DATE: January 2008		

RMT

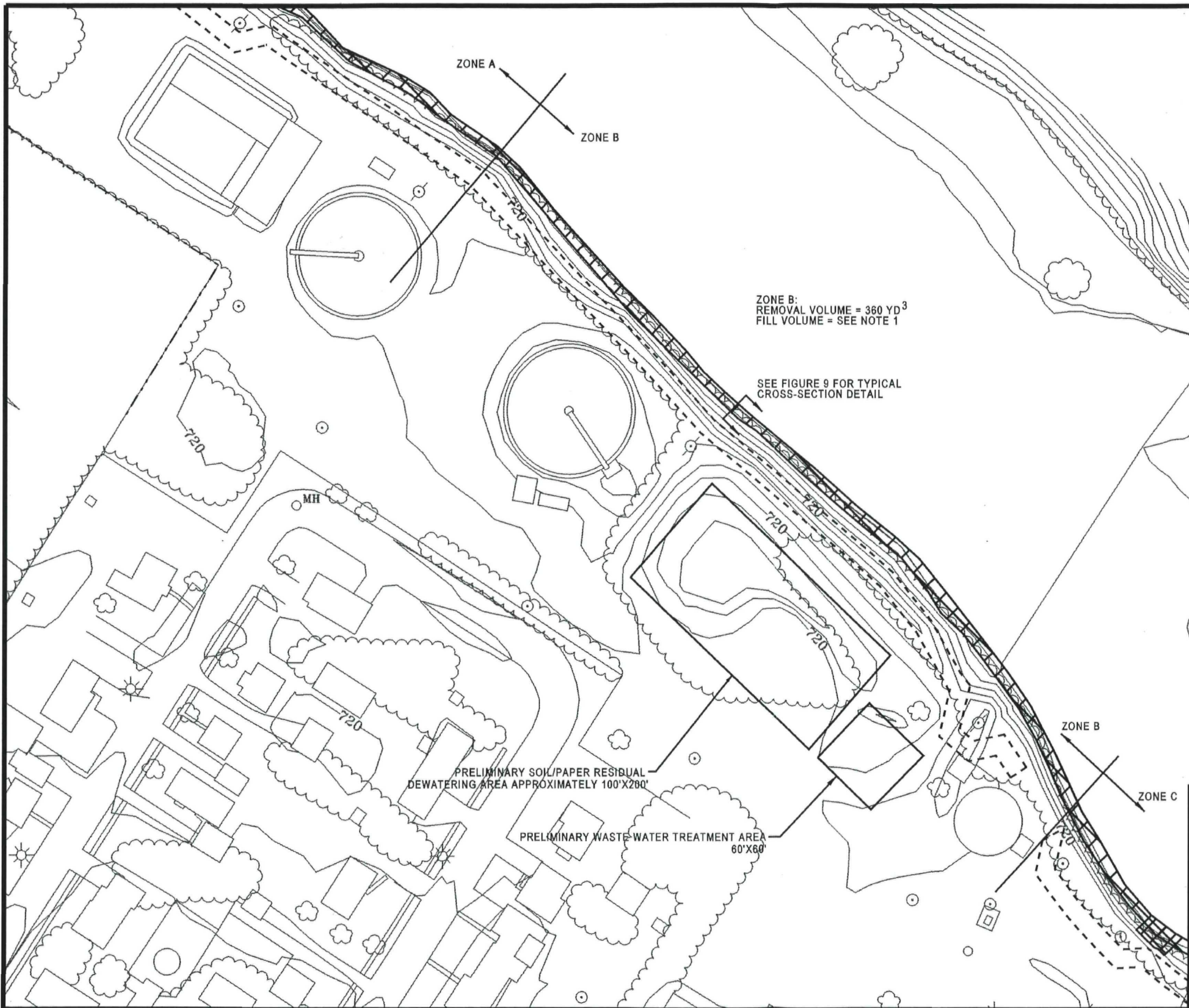
744 Heartland Trail
Madison, WI 53717-1934

P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

Levels
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(2) 1-5,7-16,18-21,23-25,42
(3) 1-63
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Reference Files
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Ref. File 2 - J:\05130\02\mill bmc033005.dgn (2) bmc
Ref. File 3 - J:\05130\02\sur face mill.dgn
Ref. File 4 - J:\05130\02\bmrrmt.DGN

Plot C
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Date - Thu Aug 30 09:08:58 2007
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Levels On - 1-63



LEGEND



APPROXIMATE EXTENT OF BANK
REWORK & SOIL/RESIDUAL
EXCAVATION



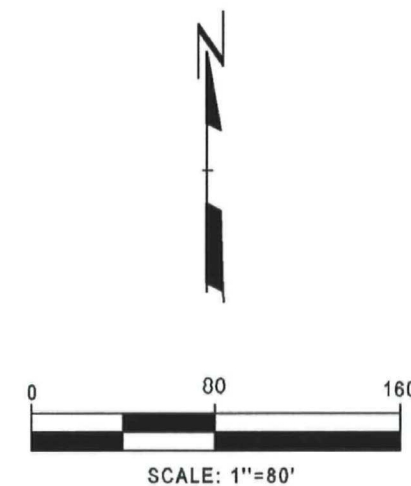
APPROXIMATE EXTENT OF
WORK PLATFORM



UTILITY POLE

NOTE

1. RIP-RAP WILL BE PLACED IN EXCAVATED AREA AS NECESSARY TO STABILIZE BANKS. VOLUME TO BE DETERMINED IN THE FIELD.



PROJECT: **WEYERHAEUSER PLAINWELL MILL BANKS
EMERGENCY RESPONSE PLAN DESIGN REPORT
PLAINWELL, MI**

SHEET TITLE:

ZONE B

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APPROVED BY:	DATE PRINTED:	FIGURE 5
DATE: January 2008		

RMT

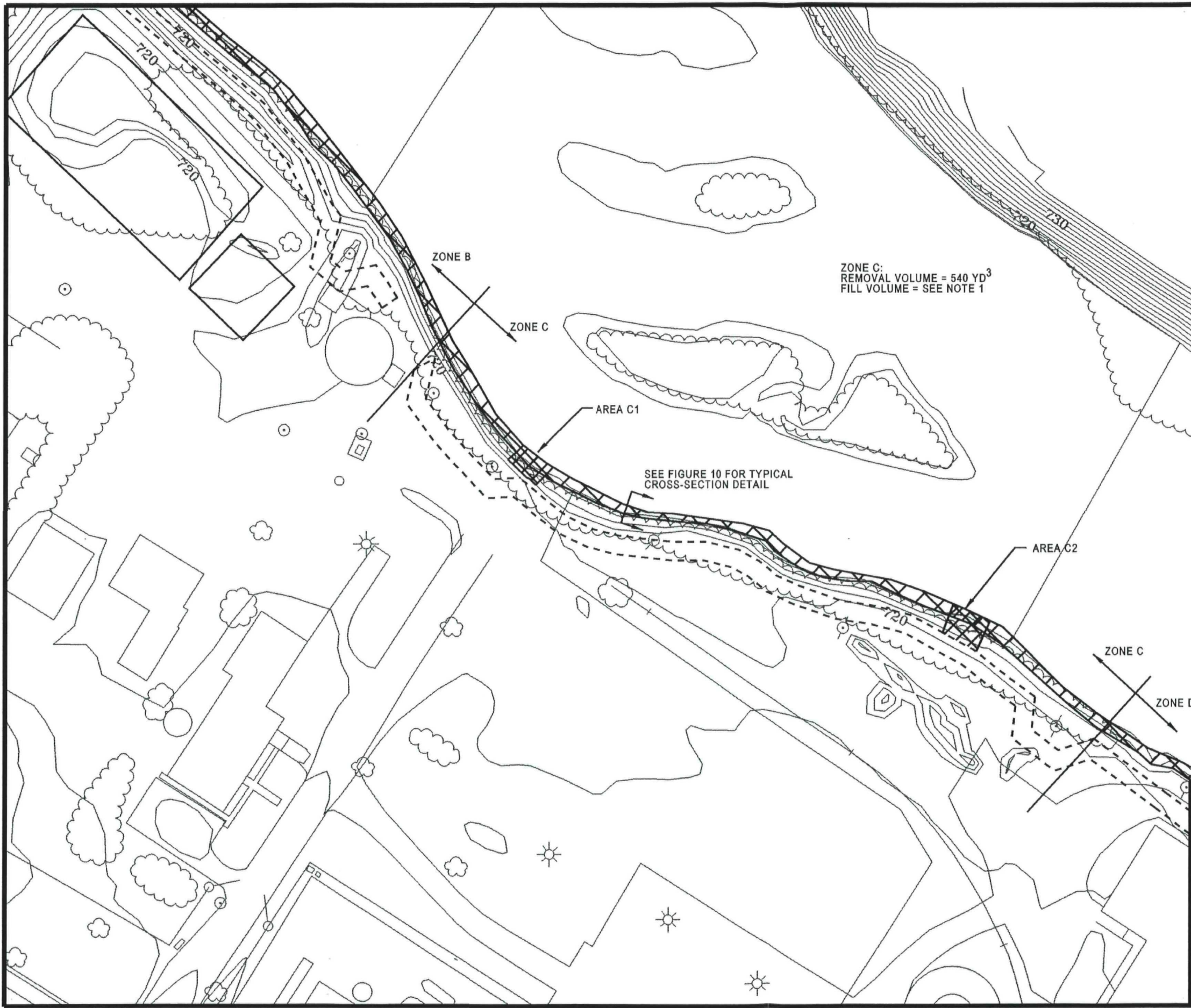
744 Heartland Trail
Madison, WI 53717-1934

P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

Levels
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(2) 1-5, 7-16, 18-21, 23-25, 42
(3) 1-63
(4) 1-63

Logical Names
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Ref. File 2 - J:\05130\02\millbmc033005.dgn
Ref. File 3 - J:\05130\02\surface mill.dgn
Ref. File 4 - J:\05130\02\bmrrmt.dgn

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LEGEND

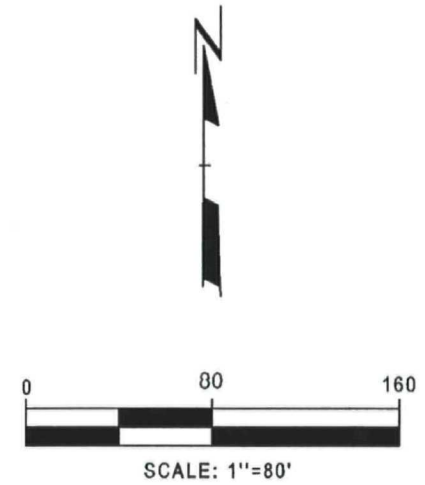
APPROXIMATE EXTENT OF BANK REWORK & SOIL/RESIDUAL EXCAVATION

APPROXIMATE EXTENT OF WORK PLATFORM

UTILITY POLE

NOTE

1. RIP-RAP WILL BE PLACED IN EXCAVATED AREA AS NECESSARY TO STABILIZE BANKS. VOLUME TO BE DETERMINED IN THE FIELD.



PROJECT: **WEYERHAEUSER PLAINWELL MILL BANKS
EMERGENCY RESPONSE PLAN DESIGN REPORT
PLAINWELL, MI**

SHEET TITLE: **ZONE C**

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APPROVED BY:	FIGURE 6	
DATE: AUGUST 2007		

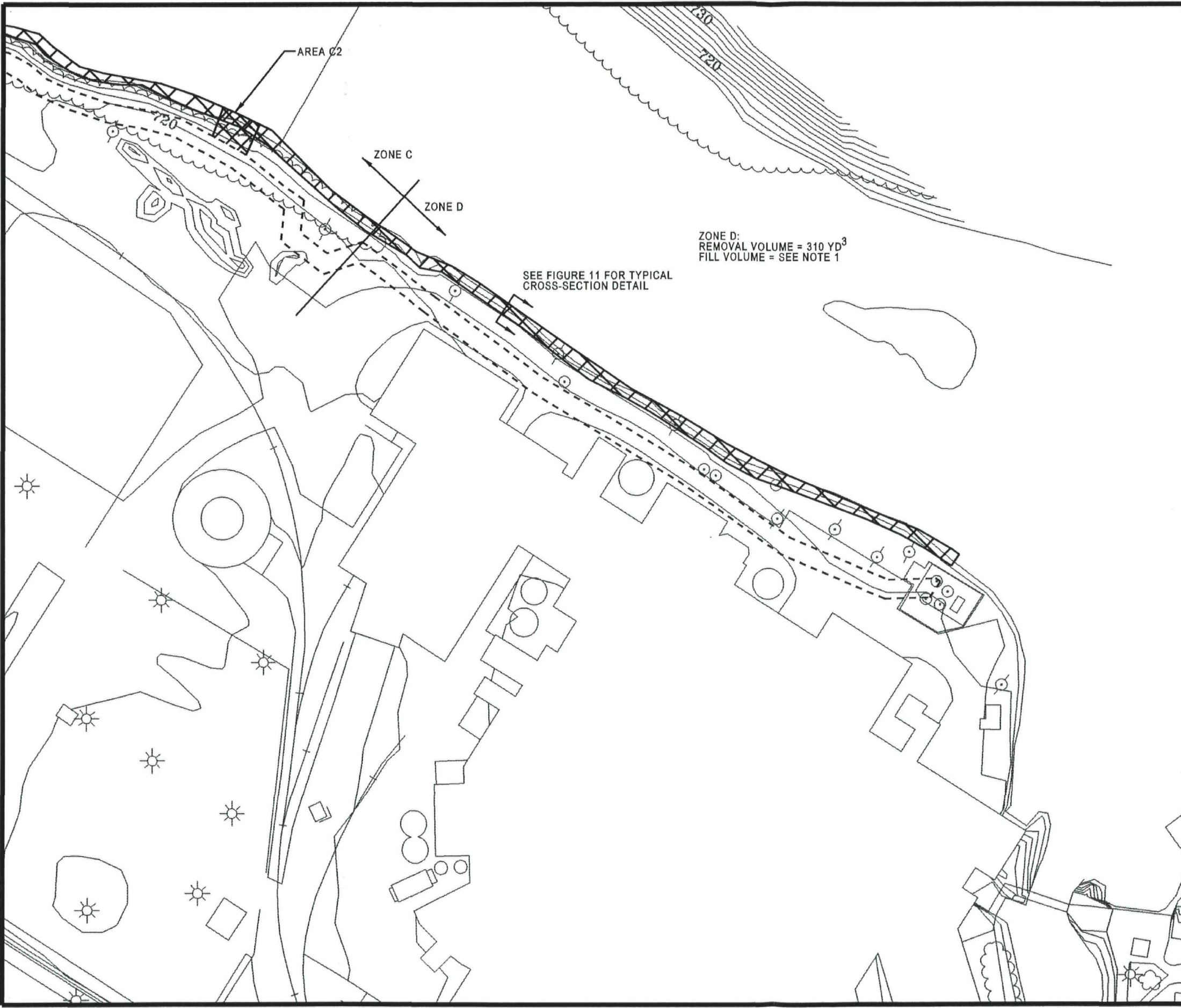
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744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

Levels
(1) 1-63
(2) 1-5, 7-16, 18-21, 23-25, 4, 2
(3) 1-63
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Logical Names
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Plot File
Design File
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Pen Table
Levels On

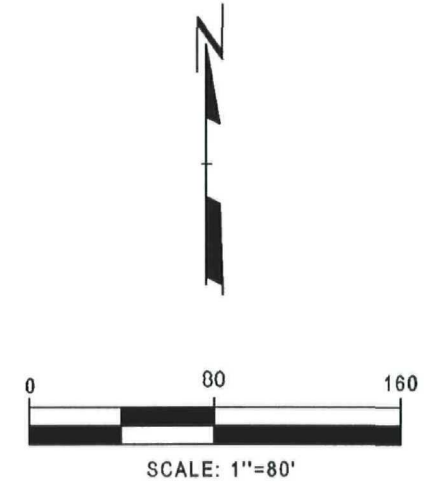


LEGEND

- APPROXIMATE EXTENT OF BANK REWORK & SOIL/RESIDUAL EXCAVATION
- APPROXIMATE EXTENT OF WORK PLATFORM
- UTILITY POLE

NOTE

- RIP-RAP WILL BE PLACED IN EXCAVATED AREA AS NECESSARY TO STABILIZE BANKS. VOLUME TO BE DETERMINED IN THE FIELD.



PROJECT: **WEYERHAEUSER PLAINWELL MILL BANKS
EMERGENCY RESPONSE PLAN DESIGN REPORT
PLAINWELL, MI**

SHEET TITLE: **ZONE D**

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CHECKED BY:	DATE PRINTED:	FILE NO. zone_d.plt
APPROVED BY:		FIGURE 7
DATE: January 2008		

RMT

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Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334